A MANUAL

OF

OBSTETRICAL TECHNIQUE

AS APPLIED TO PRIVATE PRACTICE

WITH A CHAPTER ON

ABORTION, PREMATURE LABOR, AND CURETTAGE

BY

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PREFACE TO THE FOURTH EDITION

For the third time within two years the author is afforded an opportunity to express his most grateful appreciation of the cordial manner with which this little work has been received by the medical profession.

The present revision contains, beside numerous and extensive additions to the original text, a new chapter on Cæsarean Section and practically an entire new chapter on Infant Feeding in the early weeks.

J. B. C.

240 West 138th Street, New York,
June, 1902.

PREFACE TO THE SECOND EDITION

THE cordial reception accorded to this little work has been most gratifying to the author, and he wishes to take this opportunity to extend his most hearty thanks to the many professors and teachers of Obstetrics and others who have written him letters of commendation and approval. That the book now comes to a second edition within eight months of its initial appearance is ample evidence of the many friends it has made.

To the gentlemen who have reviewed the volume in the various medical journals the author is under the deepest obligations, not only for the many words of praise that have been granted it, but for the adverse criticism as well.

These reviews have all been carefully examined, and certain of the present changes are due to suggestions received from these sources, although, of course, the original plan has been rigidly adhered to. One or two statements have been made, however, which

with the reader's kind indulgence will be discussed briefly.

A well-known journal, in a most complimentary review, says, "His instructions are proper, but, we fear, impracticable in most cases of confinement that fall to the lot of the busy general practitioner. No man can afford to do all this work for a ten-dollar fee. That is why it is not done. Patients will not pay for it and it is not fair that the doctor should, nor is it possible in most instances."

The fact of this matter is that no man has any moral right to accept cases when he is so busy that he cannot give them proper attention. In every town there are certain women who are willing and able to pay *well* for work that they know is properly and scientifically performed, and the "busy general practitioner" will do better to content himself with occasional cases of this sort and turn over the ten-dollar patients to the younger men just out of college who have ample time to give them proper care.

It has always been difficult for the writer to understand why men, who have spent many years in the practice of medicine, who have acquired a certain degree of reputation, and who are undeniably busy, will belittle them-

selves and their calling by accepting fees that can mean but one of two things: either that they are giving their services for a mere pittance, in which case they should be looked upon as philanthropists of a very poor sort, or that they are performing such careless, slovenly work that they are overpaid if they receive any remuneration whatever.

Modern aseptic surgery absolutely demands time and careful attention to detail, and while the recent graduate has the time in which to perform such work for a small fee in his effort to build up a reputation, it goes without saying that the really busy man who adopts the same course is not doing justice to himself, his patients, or his profession.

Another journal, in an article that is also highly commendatory, says,—

"The only objection we find to this manual consists in the exorbitant expense it imposes upon both physician and patient. Only the wealthy classes could afford to provide themselves with everything it recommends in the way of equipments."

This statement is hardly logical. The outfit advised for the patient's use can be purchased for less than ten dollars, and many of the articles can be improvised from material to be

found in every house. Moreover, experience has taught that everything suggested will have to be provided sooner or later, and it is merely a question of doing so at one time, before labor begins, or of procuring supplies in driblets after confinement has taken place.

The outfit called for in this book may be modified somewhat, of course, but in the main it represents only the necessities of every labor properly conducted, and women who cannot afford to pay for necessities should be regarded as charity patients and treated as such. The physician's outfit will cost about thirty dollars, and a man who has paid hundreds of dollars for his education cannot afford to begin his professional career without proper equipment.

The author's only apology for these somewhat lengthy remarks is based upon his desire to see practical obstetrics elevated to the dignity of an art instead of sunk to the level of the midwife's intelligence.

J. B. C.

240 West 138th Street, New York,
February 25, 1901.

PREFACE TO THE FIRST EDITION

THIS Manual is written solely from the point of view of the private practitioner, and in the earnest hope that it will prove of benefit to those younger members of the medical profession who are just beginning the struggle against the adverse conditions so constantly encountered in the ordinary practice of midwifery.

To this end, the "hospital idea" has been entirely eliminated from the book, and the photographic plates and other illustrations, all of which have been made especially for this work, are designed to show the methods employed, not in a lying-in institution, but in the every-day work of the practising physician.

The author wishes to emphasize the statement made in the introductory chapter,—that the methods herein described are thoroughly and essentially practical and, in the end, simple.

A man cannot do good work as an obstetrician unless he can be surgically clean from

the beginning to the end of his cases, and he cannot convert an ordinary bedroom into an aseptic lying-in chamber without a certain amount of careful preparation.

Once this preparation has been made, and he is absolutely sure that he can meet, in an instant, any emergency that may arise, he will enjoy a confidence in himself and in his ability to do good, honest, aseptic work that will amply repay him for his pains.

The author's sincere thanks are due to Dr. J. R. Tillinghast and Mr. N. B. Greene for valuable assistance in many ways, and to Mr. I. N. Boyce for his painstaking care in making the photographs.

J. B. C.

269 WEST 138TH STREET, NEW YORK,
March 24, 1900.

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OF
OBSTETRICAL TECHNIQUE

I

INTRODUCTION

THERE was once a man who said that he had no fear of drowning because he had made a careful study of the article on Swimming in the Encyclopædia. When his boat capsized and he found himself in the water, his astonishment and chagrin at his helplessness were exceeded only by the delight with which he welcomed the timely arrival of an expert swimmer who mercifully dragged him ashore.

Out of the great number of physicians who graduate every year, comparatively few have received any practical training in the *art* of obstetrics, except as they have witnessed five or six deliveries in a well-appointed Maternity Hospital, and not one in a hundred has had the actual management of a case throughout the pregnancy, labor, and puerperium.

While hospital training lays the best and

most substantial foundation for future success in medicine and surgery, it cannot, from the very nature of the case, do more than qualify a student in hospital methods; and these are, of necessity, so vastly different from the methods of the practising physician that there can be little comparison between them. Nor can books, written from the hospital point of view, giving hospital statistics and hospital results, do otherwise than impart to their readers the hospital side of the question, so that, whether or not a student has served as an interne in a lying-in institution, he usually views the matter, at the beginning of his practice, in the same light. Let him know his theory never so well, it will serve him to little purpose until he is able to apply it properly; and this ability can only come of actual experience and a thorough knowledge of the conditions that are encountered in private practice.

It is a noteworthy fact that the average physician does not, in the early years of his practice, get entirely satisfactory results in his obstetrical work. He may succeed in keeping his mortality record down to a legitimate point, but his morbidity rate is usually far higher than it should be, and this through no fault of his own. Unfortunately, a course in

Obstetrical Technique as applied to private practice is not, as yet, considered a necessary adjunct to the regular medical curriculum; and while the student is taught how to perform cephalic version and apply forceps before the head has entered the pelvic brim, he is not taught how, under the most discouraging circumstances, to manufacture surroundings that will enable him to conduct a normal case of labor in an absolutely aseptic manner.

Familiarity breeds contempt, and normal deliveries are such commonplace, every-day affairs that many physicians will make more elaborate preparations for the amputation of a toe than for the management of an ordinary obstetrical case.

Better let the toe be chopped off with an axe, the bone allowed to slough out and the wound to heal by granulation, than subject one woman to even a mild puerperal infection that will transform her from a strong, healthy being to a confirmed invalid, a burden to herself, her husband, and her family.

Success in the management of maternity cases cannot be accomplished by means of the most elaborately equipped obstetrical bag ever devised, unless provision is also made for keeping the parturient canal and its adjacent

parts surgically clean from the beginning of labor to the end of the puerperium.

It is on this account that the writer uses, and strongly advises others to use, the "Obstetrical Box," except with such patients as can afford trained nurses and expensive maternity outfits; and the practitioner will find himself more than repaid for the trouble of making it ready and sending it to the patient's house by the convenience of having it at hand when labor occurs.

Every step outlined in the book has been put to practical test of the most severe kind, and the entire method reduced to the simplest and least cumbersome form consistent with the performance of satisfactory work.

Under definite routine management from the beginning of pregnancy to the end of the puerperium the number of maternal deaths due to child-bearing should be very small indeed, for it is usually only necessary to foresee the danger in order to forestall it effectually; while with the *Obstetrical Box* already at the patient's house, together with the outfit carried by the physician when summoned to the case, the conduct of the labor is placed on a hospital footing in respect to asepsis and preparation for emergencies of every sort.

II

PREGNANCY: EARLY MONTHS

It is desirable that the pregnant woman place herself under medical care as soon as she is aware of her condition, and physicians should use every legitimate means to inculcate this idea among their patients. With the upper classes it already holds to a great extent, but women in the lower walks of life do not deem it necessary, as a rule, to consult their physicians until they have reached the seventh, eighth, or ninth month of utero-gestation.

In consequence of this delay, many women present themselves, within two or three months of their expected confinement, in a most deplorable physical condition. They are no better fitted to undergo the ordeal of labor than is an untrained pugilist qualified to enter the prize-ring. In both instances, the period calling for strength and endurance is comparatively short, but the process of "training" should be as long and as thorough as circumstances will allow. As the fighter steps into

the ring so should the woman enter the lying-in chamber,—in the "pink of condition."

To accomplish this end, the obstetrician must follow a definite plan in the management of his cases.

The woman will either send for the physician or call at his office to "engage" him to confine her, and as custom has decreed that, in the majority of instances, work of this sort shall be performed for a stipulated inclusive fee, she will be very apt to inquire at once as to the cost of the services to be rendered.

A word as to the business relation of the obstetrician to his patient will not be out of place at this point, for it is of importance that this matter be clearly understood from the first. Leaving out of consideration the comparatively few patients to whom expense is a matter of no moment, and who should be charged according to the number of visits made, as for any other professional service, the physician's fee for accouchements must be governed by that of his professional neighbors.

If it is more than is usually charged in the vicinity in which he practises, he will find his cases few and far between; while, if it is less, he will soon be relegated to the rank of a "cheap doctor" obliged to cut rates in order

to secure patients, and only to be trusted in simple, uncomplicated cases. When his practice has attained such dimensions that he cannot accept all the cases offered him, he can weed it out by raising his fee to any amount that seems advisable, but until that delightful time is reached the wisest plan is to follow the custom of his fellow-practitioners.

The fee should cover all necessary medical attendance and advice *relating to the pregnancy* from the time when the woman is first seen until two weeks after the confinement has taken place, and this matter must be made perfectly clear to her. The physician will then be in a position to keep a careful watch over her health and condition, both before and after labor, unhampered by the thought that she may resent his attentions as an effort to increase his bill by unnecessary visits. The fee should be the same at whatever period of gestation the patient presents herself; for it is exceedingly desirable to have her under observation from as early a date as possible, and women will be encouraged to place themselves under medical care in the early months of pregnancy as soon as they learn that they do not incur additional expense by so doing.

The financial question having been adjusted as briefly as is consistent with clearness, the physician will proceed to the technical features of the case.

In the first place, he should make sure that the patient is actually pregnant. As a rule, this is the case, and a few well directed questions will serve to settle the matter; but occasionally it happens that a woman who is extremely desirous of having a child, or whose husband is anxious for an heir, will imagine a pregnancy that has no existence in fact. Also, an unmarried woman, who has reason to fear that she may be with child, will, not infrequently, brood over her threatened disgrace, until, in her own mind, she is positive that she is pregnant.

As may be supposed, a physician's reputation is not enhanced by the fact that he has made preparations for the confinement of a woman who has never conceived.

In doubtful cases the obstetrician's diagnostic skill will often be tested to the last degree, and in many instances no definite opinion can be formed until gestation has reached a point that will admit of the positive recognition of a fetus by means of its heart-beat or of its movements within the uterus, either active or passive.

The SIGNS OF PREGNANCY are divided by most writers into three classes, which are mentioned here in the inverse order of their diagnostic value.

A. PRESUMPTIVE SIGNS:

1. Menstrual Suppression.
2. Vomiting ("Morning Sickness").
3. Vesical Irritability.
4. Mental and Emotional Phenomena. Morbid Longings, etc.

B. PROBABLE SIGNS:

1. Mammary Changes. (Enlargement, Areola, etc.)
2. Bimanual Signs. (Size of Uterus, Hegar's Sign, etc.)
3. Abdominal Changes. (Size, Shape, Pigmentation, etc.)
4. Violet Color of Vulvar and Vaginal Mucous Membrane.
5. Changes in Cervix. (Size, Shape, Consistency, etc.)
6. Uterine Murmur. Funic Souffle.
7. Intermittent Uterine Contractions. ("Braxton-Hicks Sign.")

C. POSITIVE SIGNS:

1. Passive Fetal Movements ("Ballottement").

2. Active Fetal Movements ("Quickening").
3. Fetal Heart-Sounds.

Menstrual suppression is placed first in the list of the Presumptive Signs of Pregnancy because it is usually the first symptom noticed by the patient and mentioned by her to the physician; but, in the experience of the writer, vesical irritability is often the earliest indication that conception has occurred. It not infrequently begins within a few weeks, or even days, after impregnation, and before the time for the next menstrual period; and while the woman is, of course, aware of its existence, she does not appreciate its significance, and so does not speak of it to the physician unless in response to his interrogations.

Very little importance can be attached to menstrual suppression *alone* as a diagnostic point in the determination of pregnancy; and this statement is of especial force when the patient is a woman who has been married but a few months or weeks.

A simple amenorrhœa may be due to one or more of a variety of causes, among which may be mentioned congestion or disease of the uterus or its appendages, pelvic or abdominal neoplasms, atresia of the cervix from

inflammation or disease, anæmia, chlorosis, phthisis, mental or nervous disturbances, and change of climate or of the customary way of living. It is not difficult to see that a woman recently married is very apt to be subjected to mental and nervous disturbances of one kind and another, while the conventional "wedding-trip" brings about a change of climate and a derangement of her customary way of living. Moreover, as sexual intercourse in the early months of married life is almost always practised to excess, and is invariably accompanied by more or less irritation if not actual injury of the genital organs of the wife, it is quite possible for considerable cervical, or even uterine, congestion to develop, with a temporary amenorrhœa as a result.

On the other hand, menstruation may continue during pregnancy up to the time when the decidua reflexa meets the decidua vera on the opposite side of the uterus and closes the cavity. Such a flow may appear regularly at the proper dates for the expected menstruation; and while the discharge is usually scanty, it may be considerable in early married life, because of congestion of the pelvic organs of the woman due to excessive sexual indulgences. In other words, sexual excesses may

cause amenorrhœa when no pregnancy exists, or a return of menstruation after conception has taken place, so that with newly-married women especially, the stoppage of menstruation is not of great value, even as a presumptive sign of pregnancy.

The statements of the patient in regard to the menstrual flow cannot always be relied upon. If she is very anxious to have a child, she may say that her periods have stopped when in reality they have merely become very scanty; or if she is endeavoring to conceal her condition, she may deny flatly that the flow has ceased, and even go so far as to stain her napkins with the blood of some animal in order to substantiate her claim.

These, of course, are the exceptions to the rule, but they should be borne in mind at all times if accuracy in diagnosis is to be acquired.

Vesical irritability is a functional disturbance due to pressure upon the bladder by the physiologically prolapsed uterus and to the accompanying traction on the utero-vesical ligaments. It may begin very early in pregnancy, and is considered by the writer to have more diagnostic value than is usually ascribed to it. In a woman who has been exposed to the possibility of pregnancy, the combination

of menstrual cessation preceded by vesical irritability is a very suggestive one. It is, of course, important to make sure that the irritability of the bladder is not due to a cystitis, which in turn may be due to inflammation or to disease of the pelvic organs. As such inflammation or disease may also account for the amenorrhœa, this combination of symptoms cannot always be depended upon; but under ordinary circumstances its significance is very great. The vesical symptoms usually disappear about the fourth month, when the uterus rises in the pelvis, to return again near the end of pregnancy, when the head settles down into the brim.

Vomiting, the so-called "morning sickness" of pregnancy, usually begins about the sixth or seventh week, but it may appear at any time after conception,—occasionally as early as the second or third day. In mild cases this symptom consists merely of nausea or slight vomiting, beginning in the morning, immediately after arising, and continuing until about noon, after which time the woman is not troubled with any further gastric disturbances until the next morning. It is a reflex phenomenon and is due to the distention of the gravid uterus, but it may be caused by any

irritation of the womb, such as might be brought about by displacements of that organ, by inflammation or congestion of the uterus or its appendages, or by growth of tumors in the pelvis. It is a very common symptom and one that cannot be disregarded, although it may be occasioned by nervousness on the part of a woman who, being married, does not want children, or who, being unmarried and yet possibly pregnant, fears the disgrace with which she is threatened.

The vomiting which occurs late in pregnancy is an entirely different matter and usually points to some severe type of toxemia.

Mental and emotional phenomena, together with morbid longings, are often symptoms of value, but only as presumptive signs and when taken in conjunction with the indications already mentioned. These are, a marked change in the disposition of the woman, whether from one of amiability to one of extreme asperity, or vice versa, or a sudden liking for unusual or even disgusting customs, habits, or articles of food. The writer had recently under his care a woman who, as soon as she became pregnant, developed an uncontrollable appetite for raw potatoes.

The mammary changes are of reflex origin.

and are dependent on the changes going on in the uterus. They consist of a feeling of fulness in the breast, accompanied by pain and tingling sensations and the secretion of colostrum. There is also more or less darkening of the areola, and the breast becomes larger and firmer. Both mammary glands are equally enlarged and progressively developed, and the changes begin as early as the second month and become more pronounced as pregnancy advances. It must be remembered that any pelvic disturbances, such as metritis, fibroid or cystic tumors, or pseudocyesis, may be the cause of similar changes in the breast, and that colostrum is sometimes secreted for years after the cessation of lactation. Symptoms referable to the breast and resembling those of pregnancy are also seen in unmarried women at the ordinary menstrual epochs; but the appearance of colostrum in the breast of a woman who has never borne children is to be regarded with great suspicion.

In the nursing woman, the sudden suppression of the milk is decidedly suggestive of another pregnancy.

In general, it may be said that the mammary signs are not of especial diagnostic value except when taken in connection with other symptoms.

The bimanual examination shows, first, the size of the uterus, the fundus being found at the level of the symphysis pubis at the end of the third month, at the umbilicus at the end of the sixth month, and at the ensiform cartilage at eight and one-half months. Hegar's sign, which is determined by bimanual examination, is dependent upon the fact that there is, just above the cervix of the recently impregnated uterus, a portion of the uterine body which is extremely compressible.

When the vaginal fingers are placed back of the cervix and those of the other hand are pressed down firmly against them just above the pubes, they can, in early pregnancy, be so closely approximated that there is apparently nothing between them but the abdominal wall. In other words, it seems as though there was nothing to the uterus but cervix, without any body whatever. (Fig. 1.)

If the uterus is markedly anteverted, as is often the case, the vaginal fingers should be placed in front of the cervix and those of the abdominal hand passed down over the posterior aspect of the fundus, as shown in Fig. 2.

This sign may be detected as early as the sixth or eighth week; and while its positive recognition requires considerable skill on the

part of the examiner, it is of great diagnostic value if it is clearly made out.

The abdominal changes are not very trustworthy, except as they may be regarded as corroborative of other symptoms present at the same time. The hypogastric flattening

FIG. 1.

of the belly, often described as a diagnostic symptom of pregnancy occurring in the early weeks, is, as a matter of fact, seldom noticed by the patient or appreciable to the physician. Tumors of various kinds, accumulations of fluid in the abdomen, and even obesity, may

cause abdominal distension greatly simulating that due to pregnancy. If this distension is of rapid development, it may even cause striæ, the so-called "silvery lines" which commonly appear on the sides of the belly and

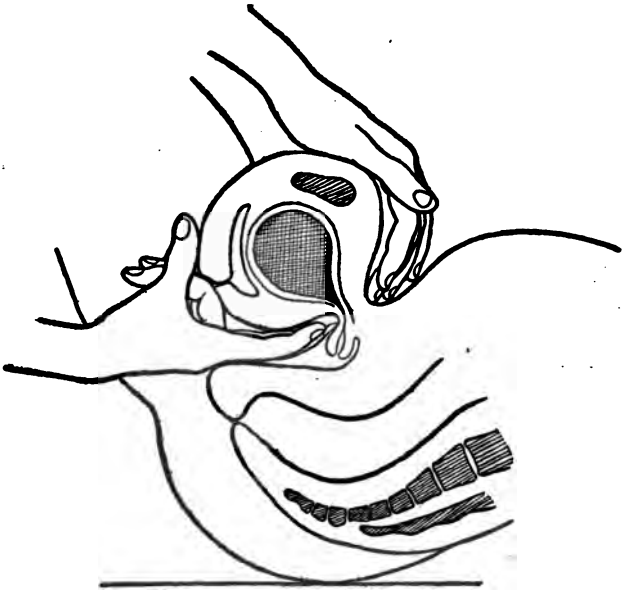

FIG. 2.

extend down towards the flanks of the pregnant woman.

The pigmentation of the linea alba and umbilicus varies greatly in different subjects, being more pronounced in brunettes and

often entirely absent in decided blondes. The writer has seen the mother of several children whose abdomen resembled almost exactly that of a virgin, being entirely free from pigmentation or silvery lines. Even changes in size of the abdomen may remain unnoticed until late in the pregnancy, as was the case in another patient recently under the author's care, who became pregnant during lactation, and did not appreciate any increase in her girth until the diagnosis was made from other symptoms, notably QUICKENING, at the end of the fifth month of gestation.

The violet color of the labial and vaginal mucous membrane may often be seen as early as the fourth week, but, *per se*, it is an unreliable sign, as it may be due to erethism, pelvic tumors, or any other condition causing great pelvic congestion.

The cervix during pregnancy is shortened, thickened, and softened, because of its increased vascularity and consequent edema; and, according to Goodell's rule, pregnancy is to be suspected when the cervix is as soft as one's lips, and highly improbable when it is as hard as the tip of one's nose. It must not be forgotten that inflammatory conditions of the uterus, myomata, and retained menstrual

fluid may cause the cervix to take on the characteristics of pregnancy, while cicatrices and cancerous or syphilitic deposits may prevent the customary softening during pregnancy and leave the cervix as hard as in the non-pregnant state.

The uterine murmur is a soft blowing sound, synchronous with the maternal heart-beat, and is usually heard most distinctly over the left side of the uterus. It is caused by some interference with the flow of blood through the uterine arteries; and, while it may often be heard after the fourth month of gestation, it is by no means a diagnostic sign, for it may also be recognized in cases of large uterine or ovarian tumors. The funic souffle, due to interference with the circulation of blood through the umbilical arteries, is a high-pitched, hissing sound, synchronous, of course, with the fetal heart-beat, and when heard (in about fifteen per cent. of cases after the fifth month) is diagnostic of pregnancy.

Intermittent uterine contraction occurring at intervals of about ten minutes during the entire period of gestation, and often appreciable as early as the end of the third month, were first described as a sign of pregnancy by Braxton-Hicks, and are usually spoken of in

the books as the "Braxton-Hicks sign." To obtain this sign the palm of the hand should be placed lightly but firmly over the uterus, and held there until the organ is felt to grow hard and unyielding, as if under the influence of a labor-pain, after which it softens and again hardens, repeating the process at fairly regular intervals. This sign, when properly recognized, is of great value, and might almost be classed with the positive signs, were it not for the fact that it may be produced by any uterine tumor, such as a polyp, a soft myoma, or a collection of blood, and it sometimes occurs sympathetically in cases of ectopic gestation. It must not be confused with the contractions of an over-distended bladder, and to guard against this possible error the bladder should be emptied with the catheter before examining for the Braxton-Hicks sign.

Little need be said concerning the positive signs, except in regard to the methods of examination for these symptoms.

Ballottement is of two varieties, abdominal and vaginal.

The abdominal method, which is seldom adopted, is performed with the patient lying on her back. The hands of the examiner are placed lightly one on each side of the abdo-

men, and with a single sudden tap of the fingers of one hand the fetus is felt to float slowly through the liquor amnii to the opposite side of the uterus, where it stops with a gentle impact, which is transmitted through the uterine and abdominal walls to the opposing finger-tips. A similar tap on this side will send it back again, and the process may be repeated until the examination is thoroughly satisfactory. For the successful practice of abdominal ballottement the necessary conditions are a sufficiently large fetus moving freely in a sufficient amount of amniotic fluid. It is usually first appreciable in the latter part of the fourth month, and may be noticed at any time throughout the entire pregnancy, and even in the early part of the first stage of labor.

In the practice of vaginal ballottement the principle is the same, but the method is different. With the patient standing on her feet, or sitting on the edge of a chair, or reclining in a half-sitting posture in bed, one hand is placed lightly on the abdomen, over the fundus, and two fingers of the other hand are inserted into the vagina, with the palmar surface of the finger-tips resting in the anterior fornix against the anterior surface of the lower uterine segment.

A sudden, gentle tap is imparted to the uterine wall by the tips of the vaginal fingers, and the fetus is felt to rise slowly through the amniotic fluid until its impact against the fundus is felt by the abdominal hand. It then sinks again to the bottom of the uterus, stopping with a soft, gentle "bump," which is distinctly recognized by the vaginal fingers. Vaginal ballottement is the more satisfactory of the two methods, and may be practised as early as the latter part of the fourth month. It is more easily recognized in the fifth month, and becomes still more distinct in the sixth and seventh months, after which, on account of the increased size of the fetus in comparison with the capacity of the uterine cavity, it becomes more and more doubtful until, in the ninth month, it is absent entirely. It is needless to say that, when it is practised, every antiseptic precaution must be observed as in the conduct of any other vaginal examination.

The positive recognition of the signs obtained by the performance of ballottement requires considerable skill on the part of the examiner; but when they are undeniably present, they constitute one of the three positive signs of pregnancy. It must not be forgotten, however, that a small uterine polyp, a cyst of

the ovary, or even a stone in the bladder may give signs similar to, though not exactly like, those obtained from the presence of a fetus in the uterus.

The detection of active fetal movement calls for no skill or experience on the part of the examiner. These movements consist of sudden kicks and jerks, which after the fifth month are often visible through the abdominal wall. When the fetus is less vigorous its motions in the uterus may be felt by placing the palm of the hand firmly but gently over the abdomen and keeping it there until the motions occur. If the fetus is unusually quiet, its activity may be stimulated by chilling the examining hand in cold water before placing it over the uterus. Although in the early months of pregnancy, and in cases of pseudocyesis throughout the entire period of supposed gestation, the patient occasionally mistakes intestinal peristalsis and the rumbling of flatus for fetal movements, there is, in reality, nothing which actually resembles this sign, and it is always present except when the fetus is dead.

The sound of the fetal heart-beat has been compared to that of a watch ticking under a pillow. It can seldom be heard before the

fifth month, although by a practised ear it may sometimes be detected a week or two earlier. It cannot by any possibility be confused with anything else, for the only sound which it resembles—that of the maternal heart—is dintinctly slower and is not heard over the abdomen. The pulsations of the maternal blood-vessels do not sound like heart-beats at all, nor is their rate per minute compatible with that of fetal pulsations.

During the examination for the fetal heart-sounds the patient should lie on her back, with her abdomen exposed and her knees slightly flexed. A stethoscope should always be used, out of consideration for the feelings of the patient, although it is undeniably the case that these sounds can often be more clearly made out by the direct application of the ear to the abdominal wall. In difficult cases this latter method may, therefore, be adopted after the abdomen has been covered by a large handkerchief or a thin towel; but it is more or less indelicate in the mind of the patient, and should be avoided if possible. The lower half of the abdomen should be examined carefully, beginning on the left side and then crossing over to the right, after which that part of the uterus above the um-

bilicus is to be auscultated in the same way. When the heart-beat is located, it should be followed up until its point of maximum intensity is found. If it seems to be equally loud at two points remote from each other, the possibility of multiple pregnancy is to be kept in mind. In such an event, unless the existence of twins can be absolutely excluded by other means, it would be well to have two equally skilful observers count the rate during the same minute at these different points and compare results. If, perhaps after repeated counts, they find a marked difference in the rates at the two points, the presence of twins would be practically a certainty.

Like active fetal movements, fetal heart-sounds, when present, are absolutely diagnostic of pregnancy, and, unless the child is dead, they are always present during pregnancy, although at times they are located with great difficulty, and in rare instances they cannot be heard at all.

It is important to remember that when fetal heart-sounds are distinctly heard and the size of the uterus does not seem to warrant a pregnancy of more than four months' duration, the existence of ectopic gestation is to be strongly suspected.

While the "Presumptive" and "Probable" signs are always worthy of careful consideration, the last three, as their heading indicates, are the only ones which are absolutely infallible, and a diagnosis of pregnancy cannot be made with *certainty* until at least one of the "Positive Signs" has been clearly demonstrated.

It must be borne in mind that, as a rule, a sufficient number of the presumptive and probable signs of pregnancy can be found to establish a diagnosis in the early months beyond any *reasonable* question of doubt, and that in rare instances only is it necessary to wait until positive signs have become manifest.

When a woman, supposedly in the first or second month of utero-gestation, presents herself with no more definite symptoms than a history of menstrual suppression for one or two periods and slight nausea, or even vomiting on arising, the tactful physician will study her own wishes in the matter, and, while being absolutely non-committal, allow his opinion to lean in the direction of her desires. Thus, if the woman is married, and evinces by her manner that she is anxious to have a child, she may be told that she is, in all probability, pregnant, and that in a couple of months the matter

can be settled definitely. In the meantime, she should be advised to go on with her preparations for her confinement, on the ground that if she is not pregnant now she will be eventually.

If, on the other hand, the woman shows a marked aversion to the idea, she may, with perfect propriety, be told that while her symptoms are certainly suggestive they are by no means conclusive, and that until more definite signs have developed she need give herself no great concern.

Such exhibitions of tact on the part of the physician not only do no harm, but on the other hand save him from the possibility of making an error in diagnosis, while at the same time the patient's confidence is gained with as much certainty as if a positive opinion had been rendered.

If every woman applying for advice in the early months of pregnancy were told flatly that it was impossible to diagnose her condition at that time, she would, in nine cases out of ten, take her earliest opportunity to consult a more tactful, though no less truthful, practitioner.

So, while the young physician must be always on his guard against positive statements

in the early months of gestation, a little tact and good judgment may be the means of saving for him many a case that would otherwise go to his rival across the street.

At times it may be necessary to DIFFERENTIATE PREGNANCY from:

1. Ovarian Tumor. (Pregnancy may co-exist.)
2. Uterine Tumor. (Fibroid; Pregnancy may co-exist.)
3. Amenorrhœa due to congestion of corpus or cervix uteri.
4. Hematometra. (Retained menses.)
5. Physometra. (Gaseous distention of uterus.)
6. Hydrometra. (Distention of uterus by fluid.)
7. Distended Bladder.
8. Fecal Accumulations.
9. Obesity.
10. Ascites.
11. Tympanites.
12. Pseudocyesis. (False or feigned pregnancy.)

From the obstetrician's point of view, it is only necessary to remember that, on careful examination, *none* of the positive signs of pregnancy will be found, and few, if any, of

the other indications. In brief, the woman is either pregnant or she is not pregnant; and it will usually be found a far easier matter to make an accurate diagnosis of her condition than to overcome her own firmly settled opinion on the subject.

When all doubt as to the existence of pregnancy has been cleared away, the following matters are to be investigated, preferably in the order in which they are discussed here, and the results of the examination recorded for future reference.

The importance of taking and preserving a careful history of every obstetrical case cannot be overestimated, and if every physician would adopt such a plan at the beginning of his practice, he would have, at the end of ten years, a mass of clinical data of the greatest possible value to him in his work.

The records of a man's *own* cases, if systematically taken and preserved, are worth many times more to him than equally good histories of cases occurring in another man's practice. They show him what he himself can do, and, by mercilessly exposing his weak points at every turn, they continually urge him on to better work and higher ideals.

To be of the greatest value, histories should

be entered on the records when obtained, for data written down from memory are often misleading and unreliable. For this purpose cards or slips of paper are the most convenient, as they can be carried in the pocket like prescription-blanks, while the patient is under frequent observation, and afterwards put on file for reference. The History Cards used by the writer are designed especially to meet the requirements of the general practitioner, and are fully explained in Appendix A.

The HISTORY of a given case should begin with its date; the patient's name, address, age, and nationality, together with the date of her marriage, the probable date of her confinement, and the number of the pregnancy; whether first, second, or third, etc.

If, for example, a woman is pregnant for the first time after several years of married life, the fact should be known in order that the cause of the temporary sterility may be investigated.

The FAMILY HISTORY of the patient is often of value, and should not be overlooked, and any diseases of her parents that might have an influence on her own health or condition should be noted.

The occurrence of twins in her own family,

and more especially in that of her husband, should be noted, for it must be remembered that heredity forms a very strong factor in the process of twinning and that this trait is far more often transmitted through the father than the mother.

Her PERSONAL HISTORY must be carefully investigated, particularly with respect to *rickets*, *scarlatina*, *diphtheria*, *nephritis*, *syphilis*, and *malaria*. If the age at which the patient first walked can be learned, it will be of help in determining the existence or non-existence of rickets in early life, and *may* lead to the discovery of a rachitic pelvis. The occurrence of diphtheria or scarlatina during childhood would naturally put one on his guard against serious renal disturbances during pregnancy, while a straightforward history of a past nephritis would, of course, call for the utmost vigilance. Syphilis is not so often encountered, but it must be remembered that it may be found where it is least expected.

If the woman is known to be a sufferer from malaria, the occurrence of fever during the puerperium may be accounted for from this cause, but a most rigid search for a possible septic origin must never be neglected.

A PHYSICAL EXAMINATION of the *heart*, *lungs*,

liver, and *spleen* should be made and the condition of these organs carefully noted, together with any other facts that may suggest themselves. Valvular disease of the heart or tuberculosis in any form will call for particular care and judgment in the management of the case.

The MENSTRUAL HISTORY is of direct importance in various ways. For example, a woman usually dates her pregnancy from what she considers to have been her last menstruation. On cross-examination it may be found that, while she ordinarily menstruates with the greatest regularity every twenty-eight days and flows for four days, the period which she regards as the last occurred five, six, or seven weeks after the one next before it and lasted only one day. This would indicate that the last hemorrhage was probably a mere incident in the *course* of her pregnancy, and not a true menstruation at all. On the other hand, if she flowed profusely and for a week or more after an irregular interval, the possibility of an unrecognized miscarriage must be borne in mind. The regular occurrence of *pain* at the menstrual epochs would suggest a displaced or undeveloped uterus, which, in turn, *might* be due to a deformed or undeveloped pelvis.

PREVIOUS PREGNANCIES should be the subject of careful questioning. If any were interrupted before term the month of interruption and, if possible, the causes should be learned. The occurrence of *vomiting*, *headache*, and *edema* during past pregnancies must be noted.

PREVIOUS LABORS often, though not always, serve to indicate the probable character of an expected one. They should be investigated as to their *number* and *character* (whether easy, difficult, protracted, precipitate, etc.). The *condition*, and, if possible, the *weight* of the infants must be learned, and any complications that may have occurred are to be noted, together with the treatment instituted.

If, for example, the woman has habitually borne oversized children, this fact must receive due consideration; while, if, in the past, her labors have been accomplished only by means of forceps, version, or craniotomy, the causes rendering the operation necessary should be determined. A slight pelvic deformity that would otherwise pass unnoticed, or an exostosis springing from an otherwise normal pelvis, may be the root of the trouble, and premature labor induced a few weeks before the natural termination of the pregnancy would suggest itself as a possible solution of the difficulty.

PREVIOUS CHILD-BEDS demand equally careful consideration. If *fever* has occurred in any or all of them, its duration, time of onset, and, if possible, its cause should be ascertained. Many women prefer to employ the same nurse for every confinement; and if a patient has always suffered from fever after her labors while in the hands of the same nurse but under the care of different physicians, the substitution of another and more competent nurse may be the means of keeping the temperature down to the normal degree. Care must be taken, of course, that no injustice is inflicted upon the nurse, but under the circumstances mentioned she should, at least, be under the closest surveillance and her tenure of office should hang by a thread.

If, in the past, the woman has not nursed her infants, the reason should be asked; and if her *breasts* have been at fault, they should receive especial care during her present condition.

Any other complications that may have arisen in the past must be carefully investigated and noted down.

The date of her LAST MENSTRUATION is now to be fixed, together with its *duration* and *amount* (whether normal, scanty, or profuse),

so that its value for computing the duration of her pregnancy may be determined by comparing it with her usual menstrual periods.

It must be remembered that no arbitrary statement can be made as to what constitutes *normal* menstruation, and that, in any given case, the function is to be regarded as normal when it preserves a regularity as to amount, duration, and interval between periods, always provided that the woman's general health is uniformly good.

Thus, one woman may menstruate with perfect regularity at intervals of exactly three weeks and flow for three days, while, in another case, the interval may be five weeks and the duration four days; and yet in both instances the process must be regarded as normal if the women are well in every respect, and if their respective menstrual periods have always shown the same characteristics.

When the date of the last *true* menstruation can be definitely established, as is usually the case, labor may be expected to occur approximately two hundred and eighty days after the cessation of the flow. As it is practically impossible to fix the exact date of the impregnation, and as it does not follow that labor will take place in precisely two hundred and eighty

days after conception, even when the exact day is known, there is no necessity for employing any of the complicated methods of determining the probable date of labor. The simplest method is the best, and there is none simpler or better than that of Nägèle, which consists in counting back three calendar months from the first day of the last menstruation and adding seven days.

For example: if the last menstruation began on September 10, count back three months, or to June 10, and add seven days, which will give June 17 as the probable day of delivery, with an allowance of at least a week on either side. The patient should then be told that she will probably be confined some time between June 10 and June 24.

If QUICKENING has occurred, the fact may be learned by asking the woman if she has "felt life," and the date on which fetal movements were first noted should be recorded. The time when these active movements of the fetus are recognized by the mother varies considerably, but in general it may be said that they are first felt about the middle of pregnancy.

If calculations based on the last menstruation and on quickening lead to approximately

the same date, it may usually be regarded as the correct one for the labor, and so entered on the History Card. In other cases it may be necessary to investigate the amount of uterine enlargement before any satisfactory conclusions can be reached.

When, however, a definite date for the delivery has been decided upon, the induction of labor (Chap. XV.) is clearly indicated, and should always be performed if the woman goes *two weeks over term*. Such cases of "missed labor" result almost invariably in overgrowth of the fetus, and often end disastrously to the child, if not to the mother, unless the pregnancy is terminated promptly.

The Krause method of inducing labor, if properly and aseptically conducted, entails no greater risk to either patient than does a normal delivery, and is the one to be chosen.

The PRESENT PREGNANCY now calls for the closest scrutiny, and no untoward symptom should, by any chance, be overlooked.

Vomiting, if it occurs, should receive appropriate treatment.

The reflex vomiting of the early months can usually be controlled by careful attention to

the bowels and the administration of the following:

Sodii bromidi, gr. x;
Aquæ camphoræ, ℥ss.
Sig.—To be given every four hours.

If this is not efficacious, more active measures must be adopted; and under no circumstances should a patient be permitted to become so weakened by vomiting that her life or even her health is endangered. If the irritability of the stomach is such that no food whatever can be retained, and if it cannot be corrected by drugs, special diet, rest in bed, rectal feeding, or dilatation of the cervix, the induction of abortion is not only perfectly justifiable but absolutely imperative as soon as the woman begins to show signs of failing flesh and strength with a rising temperature.

It must not be forgotten that the vomiting which occurs late in pregnancy is to be regarded with the greatest suspicion, even when it causes the patient very little discomfort, for it is usually indicative of some severe toxemic disturbance.

Headache, especially if continuous, may be of renal origin, and its cause must be accurately made out.

Syncope, while often of no significance, may

also be traceable to disorders of the renal function and must never be neglected.

Edema of the feet and legs is not uncommon as a result of pressure on the abdominal veins, and is usually of no especial moment; but if it extends to the upper extremities or to the face it is of the gravest import.

The degree of *Arterial Tension* must be noted, and its relation to the amount of kidney strain must be kept constantly in mind.

The matter of *Albuminuria* is now to be discussed, and the dangers of renal complications should be firmly implanted in the patient's mind, as well as the positive assurance that these dangers can be averted if frequent and regular examinations of the urine are made. No matter how early in pregnancy a woman may place herself under medical care, an analysis of her urine should be made within a week of her first visit. Afterwards a specimen should be examined on the first of every month, until the beginning of the eighth month of gestation, and then weekly, until labor has taken place.

It is the writer's custom to make these examinations on Wednesdays, the patient being instructed to bring or send her specimen on the first Wednesday of each month, until the

eighth, and then on *every* Wednesday until she is confined.

A list of specimens due to arrive on each Wednesday is kept, and the names are checked off as they come in. If, as sometimes happens, a woman forgets or neglects to send her specimen, she is notified at once by mail or messenger, and instructed to send it within twenty-four hours, without fail.

It is needless to say that a certain amount of tact must be used in enforcing this rule, but its observance should invariably be insisted upon, for cases in which unexpected eclamptic seizures occur are, almost without exception, those in which the routine examination of the urine has been omitted.

If, after the importance of the matter has been carefully explained to her, a woman persistently neglects to send her specimen when it is due, the physician had best decline the case entirely. If he continues to attend her, he will find that none of his other directions will be complied with, unless they are to her liking, and his control over her will be lost.

The writer supplies to his patients, in which to send their specimens, wide-mouthed, four-ounce bottles labelled as follows:

IMPORTANT.

Take specimen from *mixed* evening and morning urine, and deliver before noon on WEDNESDAY.

Am't in 24 hours.....

Name .....

Address .....

Date.....

DR. COOKE, 240 WEST 138TH STREET.

When a full bottle is left at the office, the bearer receives in exchange a clean empty one, with a *new* cork and freshly labelled, for the following week. This plan insures a *clean* bottle, a sufficient quantity of urine for testing, and, more than anything else, impresses upon the patient's mind the importance of sending the urine regularly and promptly.

By having all the specimens sent on the same day of the week, the work of examining them is lessened to a marked degree. Each specimen should be tested for albumen, sugar, and urea as well as microscopically, and the results of the analyses recorded on the History Card or in a book kept for the purpose. The writer does not require his patients to measure the quantity of urine passed in twenty-four hours unless, from the examination of a

night to morning specimen, it seems advisable to do so.

If the percentage of urea falls to 1.5, the twenty-four-hour quantity should be ascertained in order that the amount of urea excreted in that length of time may be learned.

So long as this amount equals or exceeds three hundred grains *per diem* no concern need be felt; but if it falls much below that quantity the case should be carefully watched, daily examinations being necessary in some instances.

In addition to the more important subjects already discussed, the patient should be advised in the following matters:

Her *Bowels*, if constipated, as will probably be the case, must be carefully regulated, and such advice or treatment given as will insure at least one satisfactory stool every twenty-four hours.

An overloaded state of the bowels during pregnancy is one of the common causes of uterine inertia at the time of the labor.

The necessity for keeping her digestive tract in good condition, and the extra strain to which constipation subjects her already overworked kidneys, should also be made clear to her.

Her *Appetite*, if poor, may call for a simple bitter tonic, but, as a rule, judicious exercise in the open air will be all that is necessary. It is to be borne in mind, however, that, in general, the appetite is somewhat increased during pregnancy; and while a woman may be expected to eat more heartily than at other times, she must restrain her desire for food to a reasonable degree, lest her infant develop to a size disproportionate to the capacity of her pelvis.

This does not often happen, but cases have been recorded in which the unusually large size of the fetus seemed to be directly traceable to excesses in eating.

Unusual articles of food are not apt to do harm unless it can be shown that they are direct causes of digestive disturbance.

The *Skin* must be kept in good condition, and its relation to the renal function should be briefly explained.

A warm bath with plenty of soap, followed by brisk rubbing with a coarse towel, should be taken daily, preferably at night, just before retiring.

The *Teeth* will require more than ordinary attention during pregnancy; and it is a good plan to advise the patient to consult a dentist

and have her mouth examined and her teeth put in order before her condition is very far advanced. After this has been done, the frequent use of any simple alkaline mouth-wash, combined with thorough brushing of the teeth both before and after meals, as well as at bedtime and on arising, will effectually prevent the occurrence of any destructive process.

Regular Exercise in the open air should be taken every day, but it must never be pursued to the point of fatigue, and all violent exertion must be avoided. Of all forms of out-door exercise walking is the best, because of its effect in favoring the engagement of the fetal head. Beginning with the eighth month, the woman should increase her daily walk half a mile a day until six miles becomes her daily average. Golf, in moderation, carriage riding over smooth roads, and croquet may also be indulged in. Stair-climbing, lifting heavy weights, and similar forms of exertion are extremely dangerous, while the sewing-machine, most fittingly styled a "labor-saving" device, should never be used during pregnancy. Dancing, especially at night in a hot, stuffy room, is to be strictly forbidden.

Sleep in greater amount than usual is re-

quired by the pregnant woman, and a short nap every afternoon is highly desirable.

Clothing must be adapted to the requirements of the woman's condition, and anything that interferes in the slightest degree with the full development of both mother and child must be given up.

Corsets should never be worn during pregnancy, for not only do they compress the abdominal contents and predispose to maldevelopment and malpositions of the fetus as well as to disturbances of the renal and digestive functions, but, by pressure on the constantly enlarging breasts, they cause flattening, if not actual depression of the nipples, and, by impeding free respiratory movements put an additional strain on the already hypertrophied heart. In their place some form of "Corset Waist" may be worn, and it, together with the outer garments, must be enlarged from time to time as the abdomen increases in size.

Underwear should be of wool, in weight suited to the season of the year, and should consist of under-drawers reaching to the ankles and wrappers with long sleeves. Wool is recommended because it absorbs the moisture of the body as rapidly as it is excreted, thereby keeping the skin dry at all times

and preventing sudden changes of surface temperature.

Garters that encircle the leg add to the already existing tendency towards the formation of varices in the lower limbs, and should be discarded in favor of some form of hose supporter that may be attached to the corset waist.

Sexual Intercourse during pregnancy should, from a physiological standpoint, be interdicted. In any event the husband and wife should be advised to occupy separate beds during the early months, when abortion is liable to occur, and again towards the end of gestation, when premature labor pains are so easily induced.

Advice on this subject need not be offered unless it is asked or the circumstances seem to call for it, and it is doubtful if the physician can ever be certain that his directions are followed after they are given.

The patient must also be instructed to notify her physician at once if any unusual complications or conditions arise during the course of her pregnancy; and it is well at this time to give her a list of the articles that she will need for her confinement.

As this Manual treats solely of technique, it is assumed that the reader is familiar with

the unusual as well as with the ordinary diseases and disorders of pregnancy, and only those matters have been discussed that should have a place in the routine management of every case. The physician need not concern himself with any of the rarer complications except as they may occur in individual instances, when, of course, he will be apprised at once of their onset.

For some time past the writer has made use of a little pamphlet treating in a very brief and non-technical way of the hygiene of pregnancy, the preparation of the patient for labor, and the arrangement of the lying-in room; and containing a list of the articles to be provided by the patient for her confinement.*

A copy of this little book is given to each patient when she applies for treatment, so that she may consult it at leisure at her home and always have it at hand. By this plan the physician is saved the recital of a long list of matters which the woman would be very apt to forget or to confuse in her mind.

Having now recorded his patient's history, advised her as to the care of herself and her preparations for labor, impressed upon her

* See Appendix B.

the importance of sending her urine regularly for examination, and urged her to consult him freely if anything interferes with her usual good health, the physician is at liberty to dismiss her from his mind until the beginning of the eighth month of utero-gestation.

III

THE PATIENT'S OUTFIT

It will be remembered that, on the occasion of the patient's first visit, she was given a list of articles to be provided by herself for use at the time of her confinement.

These articles should be in readiness at least three weeks before the expected date of labor, and should be as follows:

A. For the Mother.

Six Abdominal Binders, one and a quarter yards long by one-half-yard wide; made of the cheapest grade of unbleached muslin. This muslin comes in a width of one yard, and three and three-quarters yards are required to make the necessary number of binders. They should be torn in the proper size and the selvage torn off, but it is not desirable to have them hemmed or finished in any other way. They should then be washed and ironed to make them soft and comfortable. The cheapest grade of muslin is recommended because the more expensive, and consequently heavier, quality does not take the pins

well, and is stiff and uncomfortable when in use.

Two Obstetrical Pads, each twenty inches square, made of cheese-cloth, stuffed with cotton batting (*not absorbent cotton*) until they are three or four inches thick. They should then be "tacked" or tufted sufficiently to keep the cotton from slipping, and are to be placed under the patient's buttocks at the conclusion of labor.

When practicable, it is well to have them sterilized before use; but this is not absolutely necessary if the pads are made with clean hands from new material, as should always be the case.

Two and One-Half Dozen Sanitary or Vulva Pads. These are made of *absorbent* cotton, ten by three inches and two inches thick, and are covered with bleached cheese-cloth or plain absorbent gauze, which is, in reality, the same thing with the sizing washed out. They must be made of absolutely new and fresh material, with clean hands, and, if practicable, should be sterilized before use.

As soon as they are made they are to be done up in packages of six, and each package wrapped separately in a clean towel or in clean white muslin and laid away in a convenient place, free from dust, until wanted.

They are used during the puerperium to

place over the vulva to receive and absorb the lochia, and are to be changed as often as they become soiled. Soiled pads must be removed at once from the room and burned.

One Dozen Clean Towels, preferably old soft ones without fringe. These are to be pinned up in another clean towel and laid away with the other things. They are for use only about the patient, and are *not* for the hands of the physician or nurse. If a sterilizer is available they should be sterilized, but this is not indispensable.

Safety-Pins. Two papers of large and one of small size, in addition to those required for preparing the bed.

One New Nail-Brush for the nurse. The physician will bring his own.

Absorbent Cotton. Half-pound.

Tincture of Green Soap. Four ounces.

Lysol. Four ounces.

Alcohol. Six ounces. For bathing purposes.

Two Pieces of Rubber Sheeting, each two yards square. The one to be placed directly over the mattress on which the patient lies during the puerperium may as well be of the so-called "enamel-cloth" (white), such as is used on kitchen shelves. It is very inex-

pensive, and will answer perfectly well for the two or three weeks that it is in use, after which it should be destroyed.

The other piece should be of the regular quality of white rubber sheeting, to be found at the druggist's. After the labor has taken place it may be thoroughly cleaned and used on the infant's bed, where it will be needed for the next two or three years. It must, however, be cleaned *immediately* after labor and before the discharges have had time to dry.

Two Wash-Basins, preferably of agate or enamel ware. These will be needed for solutions at the time of the labor; afterwards, for bathing the patient's genitals during the puerperium, and still later for use about the infant.

One Slop-Jar or Pail made perfectly clean, and used during labor, for receiving soiled sponges, towels, and the like, as well as any solutions or discharges that can be directed into it.

A Good Supply of clean towels (in addition to the dozen already mentioned), sheets, pillow-cases, and night-gowns, for the patient's use. Nothing is more discouraging than to require a clean sheet or night-gown at such a time and find that it is not to be had, while clean towels,

almost without number, are needed in the lying-in room.

B. For the Infant.

Olive Oil. Eight ounces. For anointing the infant immediately after birth and before it is washed. A good grade of salad oil answers every purpose.

One Tube Plain Vaseline.

One Cake Soap. Castile or ivory.

Six Flannel Binders. Six inches wide by one-half yard long. Forty-cent flannel.

One Soft Flannel Blanket one yard square to wrap the infant in immediately after birth.

Four Dozen Diapers of linen or cotton diaper cloth. The cotton cloth is just as good as the linen and is less expensive. Not less than four dozen should be provided, and it is a great convenience to have one or two dozen more.

One Infant's Bath-Tub. The baby will not be bathed in the tub until the umbilicus is healed, but it may be required at the time of the confinement for resuscitating an asphyxiated infant by immersion in hot water.

One Bath Thermometer. The temperature of the infant's bath should never be "guessed at" by the nurse.

ONE BOX TALCUM POWDER.

TWO POWDER-BOXES AND PUFFS of different appearance; one for the buttocks and body; the other for the neck and ears.

ONE SMALL NAIL SCISSORS.

ONE SOFT INFANT'S HAIR-BRUSH.

A SUPPLY of small squares of absorbent gauze or clean old linen, for washing the infant's mouth, eyes, and ears and to be destroyed after use.

TWO SPONGES, one for the buttocks and one for the body.

SIX SOFT WASH-CLOTHS for the face and neck.

TWO LARGE SOFT BATH-TOWELS to wrap the child in after its bath.

It will be seen that many of the above named articles can be improvised from material already on hand.

FOUR UNDERSHIRTS of stockinet.

FOUR PETTICOATS of flannel.

FOUR NIGHT-GOWNS of stockinet or flannel, according to the season of the year.

TEN SLIPS, the more simply made the better.

The undergarments should be made to open in the back so that they may be fitted together and into the slip or dress, and all the clothing put on at once. They may be purchased ready

made, under the name of the "Gertrude Garments for Infants."

The above outfit of clothing is the smallest allowance with which a child can be kept clean and comfortable, and it would not be an extravagance to double the number of undergarments mentioned.

The various articles for the mother's use are to be laid away in a convenient place; preferably in a bureau drawer which has been emptied and cleaned for their reception and where they will be readily accessible to the physician or nurse.

Confusion and delay after labor has begun are as undignified as they are annoying.

In like manner, the infant's outfit should be put away in a convenient drawer or closet.

The physician should assure himself that his instructions on these subjects have been complied with to the letter if he wishes to perform his duties as an obstetrician in a manner consistent with the dignity of his profession.

NOTE.—The outfit for the mother's use, as described above, is now made up by Johnson & Johnson, and can be obtained through any druggist or dealer in surgical supplies.

IV

PREGNANCY: LAST MONTHS

WITH the eighth month of utero-gestation begins the most critical period in the life of a pregnant woman, and she must be under close observation from this time until the end of the puerperium.

The URINE, which until now has been subjected to monthly tests, must be examined every week, and the physician must be constantly on the alert to recognize at once the possible onset of symptoms indicating renal insufficiency.

The very fact that eclampsia is a rare complication, occurring but once in three hundred pregnancies, should serve as an added reason for the exercise of every imaginable precaution against its development.

The man who relies on the rarity of a preventable complication to protect his patients against its attack is not worthy of membership in an honorable profession. He had best give up his medical career and devote his energies to the gaming-table, where the element of luck holds a more legitimate position.

It is the writer's firm belief that, under proper management, eclamptic seizures can always be prevented, provided the woman place herself unreservedly in the hands of her physician during the early months of pregnancy. To insure this protection, frequent and often daily examinations of the urine may be necessary, together with rest in bed and the observance of the strictest dietary and hygienic precautions, while as a last resort the induction of abortion or of premature labor may be the only alternative.

Moreover, it must not be forgotten that certain grades of albuminuria which do not seriously threaten the mother's condition may so affect the fetus that, after every other measure has been tried without success, labor must be induced in order to save its life. In consequence of this fact the fetal heart-sounds must be examined at frequent intervals during an attack of albuminuria of any significance.

In justice to himself, the physician should not shoulder such responsibilities unless the patient is entirely willing to aid him by following his directions implicitly, and, as has already been said, he had best retire from the case if his control over her cannot be complete and unquestioned.

"He is a poor physician who is not a stern despot," and many a young man's reputation has been permanently injured by the fatal outcome of one or two cases in the early years of his practice, when his good nature got the better of his good judgment.

THE EXAMINATION OF THE PREGNANCY should never be delayed later than the beginning of the eighth month, and it is well to take the pelvic measurements as soon as practicable after the patient's first visit. The results of the examination are, of course, to be noted on the History Card. (See Appendix A.)

Unless the physician has an office nurse, which is hardly to be expected in the early years of his practice, this examination is best made at the woman's house, and always by appointment.

The woman should be directed to attire herself as for the night, and to lie on a hard mattress or on a couch, covered with two sheets, as for a vaginal examination. (Plate V.)

The BREASTS should be carefully inspected and their *form*, the condition of the *nipples*, and the character and amount of the *secretion* must be noted. From now on these organs must be carefully watched and prepared to perform their functions.

The nipples are to be anointed every night with albolene, or some similar liquid petroleum product, to soften the crusts formed by the escaping colostrum, and this is to be followed in the morning by a thorough cleansing and removal of the crusts with castile soap and warm water, after which the entire breast is to be stimulated by bathing in water as cold as can be borne. If the nipples are *small* or *depressed*, they should be drawn out with the thumb and forefinger for five minutes every night and morning. If *inverted*, an attempt should be made to draw them out daily with a breast-pump, which must be employed with every attention to surgical cleanliness. The so-called "English" breast-pump is the best for this and all other purposes. If the nipples are eroded, ulcerated, fissured, or eczematous, suitable treatment must be instituted at once.

It should be remembered, too, that, aside from the discomfort and even danger to which the mother is subjected by reason of tender or diseased nipples, the child as well is bound to suffer to a greater or less degree if suckling is not conducted in a normal manner or if it becomes entirely impossible.

The ABDOMEN is next to be inspected, and its *size* (*large* or *small*) and *form* are to be

noted. A very large abdomen may contain twins, while one that is pendulous or laterally displaced may indicate pelvic deformity or an intra-abdominal neoplasm.

The EXTERNAL PELVIC MEASUREMENTS should now be taken and the length of the various diameters carefully noted. As has been already said, it is well to make this part of the examination as soon as practicable after the patient's first visit, so that if deformity is discovered ample time will be had for determining the best method of terminating the pregnancy.

This suggestion, of course, applies only to primigravidæ and to multigravidæ who give histories of difficult operative deliveries. Women who have borne children easily in past instances need not be suspected of pelvic deformity, but, as a matter of routine, *all* women seen for the first time should be subjected to a thorough pelvimetric examination not later than the beginning of the eighth month of gestation.

Such an examination is, of course, unnecessary in subsequent pregnancies, for reference to the first History Card will give the required data.

The most important of the external pelvic measurements is the *external conjugate*, which

is the distance between a point one-eighth of an inch below the upper edge of the symphysis pubis and the depression below the spinous process of the last lumbar vertebra.

In the great majority of women this diameter will be found to be between twenty and twenty-one centimetres, and there is only ten per cent. of contracted pelves when the external conjugate is between nineteen and 21.5 centimetres. Between sixteen and nineteen centimetres there will be fifty per cent. of contractions, and if the distance is sixteen centimetres or under shortening of the true conjugate is certain to exist.

Owing to the variations in the thickness of the bones and the interposed soft parts in different women, the external conjugate diameter is only of relative value in determining the length of the true conjugate of the brim. A very rough estimate may be made by subtracting 8.5 centimetres from the external measurement; but when it is remembered that every fraction of a centimetre in the true diameter is of the utmost importance, the impossibility of arriving at any definite conclusions in this way can easily be understood.

Considerable practice is required before the external conjugate diameter can be measured

with accuracy, and the beginner in pelvimetry should take advantage of every opportunity afforded him for acquiring skill in this important method of examination.

In addition to the external conjugate diameter, the following measurements should be taken:

	Normal.
Between anterior superior spines .	26 centimetres.
" iliac crests	29 "
" trochanters	31 "
" posterior superior spines .	9.8 "

The *right* and *left oblique diameters* are measured from the posterior superior spinous process of the ilium on one side to the anterior superior spinous process of the opposite side, and are approximately twenty-two centimetres in length, although the right is usually a trifle longer than the left. The right oblique diameter is taken when the woman is lying on the right side and extends from the posterior superior spine nearest the table to the diagonally opposite anterior superior spine.

If there is any marked difference between them, the other measurements suggested by Nägèle should be taken. They are: *a.* From the tuber ischii on one side to the posterior superior spinous process of the ilium on the

other; *b*. From the anterior superior spinous process of one ilium to the posterior superior spinous process of the other; *c*. From the trochanter major of one side to the posterior superior spinous process of the opposite ilium.

The obliquely contracted pelvis of Nägèle is, in its lesser degrees, very difficult of diagnosis, and will always pass unrecognized unless accurate and methodical measurements of every pelvis are made, for *there is nothing in the patient's appearance or history to direct attention to her deformity.*

To a less degree the same is true of the other forms of abnormal pelves, and unless the physician gives pelvimetry a prominent place in the routine management of his cases he will encounter many a contracted or deformed pelvis where he is least expecting it.

The external conjugate diameter, the oblique diameters, and the distance between the posterior superior spines are taken while the patient is lying on her side with her back towards the operator, and her thighs slightly flexed on her abdomen.

The depression below the spine of the last lumbar vertebra may usually be felt distinctly as a little hollow below which no spinous pro-

PLATE I.

EXTERNAL PELVIMETRY.

cess will be found. Distinct dimples often mark the posterior superior spines of the ilia.

For the other external measurements the woman lies on her back with her legs extended. The pelvimeter should be held in such a position that the scale can be distinctly seen when the measurements are made. (See Plate I.)

Many instruments have been devised for determining the length of the *diagonal conjugate* and *true conjugate* diameters, none of which is adapted to the routine requirements of the general practitioner. The following method is the least complicated, and therefore the best for ordinary use. The patient is placed in the lithotomy position and brought to the edge of the bed with her buttocks reaching beyond the mattress. After every antiseptic precaution has been taken, as for a vaginal examination during labor (see page 101), two fingers are introduced into the vagina and carried up until the tip of the middle finger encounters the sacral promontory, care being taken that neither the last lumbar nor the second sacral vertebra is mistaken for the *first* sacral vertebra. The hand is now raised in the median line until the arcuate ligament under the symphysis is distinctly felt on its

radial edge. This point is fixed with the forefinger of the other hand, and its distance from the tip of the middle finger is measured by the pelvimeter after the examining hand has been withdrawn. (Fig. 3.)

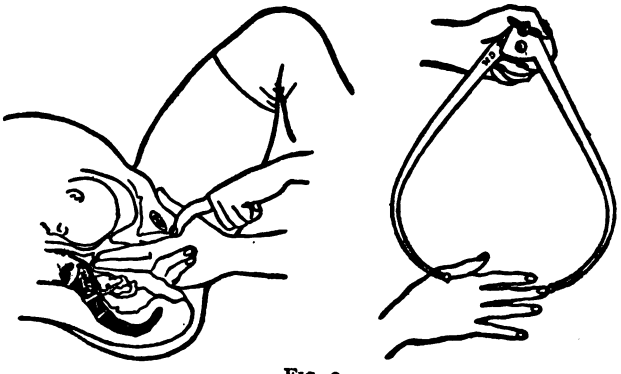

FIG. 3.

Measuring the diagonal conjugate diameter.

This gives the *diagonal conjugate*, and by subtracting from it one and three-fourths centimetres the approximate length of the *true conjugate diameter* is determined.

From these measurements the diagnosis of the pelvis (normal, flat, rachitic, etc.) is to be made and noted on the History Card.

If the pelvis is contracted to such an extent that the delivery of a living child at term is out of the question, the best method of ter-

minating the pregnancy must now be decided upon.

If the *true conjugate* diameter is 9.5 centimetres (ext. conj. about 17.5 centimetres), labor should be induced at the thirty-sixth week of gestation.

If the *true conjugate* is only eight centimetres (ext. conj. about sixteen centimetres), labor should be induced also at the thirty-sixth week, and aided by forceps, version, or symphyseotomy. Or, labor may be induced at the thirty-second week and the child reared in an incubator.

If the *true conjugate* is seven centimetres or less (ext. conj. about fifteen centimetres), the woman may be allowed to go to term and be delivered by Cesarean section, unless the circumstances are such that the operation cannot be skilfully performed, when, in justice to the patient, abortion should be induced as soon as the deformity is recognized.

It must always be remembered that symphyseotomy and Cesarean section are *elective* operations in every sense of the word, and must never be attempted after protracted efforts at delivery by forceps or version have been made.

In such cases the child will probably be

moribund, if not dead, and the mother will be greatly exhausted and in no condition to undergo the strain of a capital operation. Craniotomy will afford the woman far better chances for recovery and should be regarded as the proper procedure.

The FETAL HEART is next to be located and counted. If it is most distinctly heard *above* an imaginary line drawn horizontally across the belly at the level of the umbilicus a breech presentation is probable, while, if it is loudest *below* that line the fetus is probably presenting by the vertex. If, at best, it is very faint, a dorso-posterior position may be expected; while, if it is very loud and distinct, the back of the fetus is probably lying close to the abdominal wall of the mother.

The *frequency* of the fetal heart is not of any especial significance except by comparison with itself. That is, marked variations in its rate would indicate disease of the fetus and call for investigation.

Fetal movements should be noted as to their *site*, *amount*, and *strength*, and serve as an index to the vitality of the infant, while, by their location, they help in determining the position of the child by showing the location of its limbs.

The *Presentation* and *Position* of the fetus must now be made out by careful abdominal palpation, and the relation of the presenting pole to the pelvic brim should be noted.

If it has not yet entered the brim, gentle, firm, and well-directed pressure will determine the ease or difficulty with which it will engage.

The VAGINAL EXAMINATION, which should be coincident with the internal pelvic measurements, must, of course, be conducted with all antiseptic precautions. The *size* of the vagina should be noted, with the character of its *secretion* (normal, scanty, profuse, or purulent) and the presence or absence of *rectocele* or *cystocele*.

The CERVIX may be *torn*, *intact*, or *repaired*; *long* or *short*. Its *secretion* may be the normal "mucous plug," or it may be purulent. The *external os uteri* must be carefully examined, and if it will admit a finger the degree of patency of the *internal os* is to be noted.

When examination reveals a short, soft, and patulous cervix, the mucous plug is always wanting, and the increased danger of infection entering the uterus calls for the utmost care in the management of the case.

If the os is gaping, the cervix soft, and the

lower segment of the uterus boggy, the possibility of the existence of placenta previa must not be forgotten.

The PERINEUM may be *intact*, *torn*, or *repaired*, and its *length* and degree of *dilatability* must be noted.

If the examination of the pregnancy has been made at the physician's office, he should, if he has not already done so, visit the patient at her home during the eighth month of gestation and inspect the room to be occupied for the lying-in.

He should see that it is of good size (so far as circumstances will admit), well ventilated and well lighted both by day and night. If possible, it should have a sunny exposure, except when labor is to occur during the hot summer months. At such times a north or east room is preferable.

If the room has been occupied recently by a patient suffering from one of the contagious or infectious diseases, it must be condemned, if possible, and another selected; or, if such an arrangement is out of the question, it should be thoroughly disinfected and repainted, repapered and refurnished throughout.

After this has been done, the patient should be instructed to have it thoroughly cleaned

PLATE II.

A

B

PREPARATION OF BED FOR NORMAL LABOR.

and aired at least two weeks before labor is expected and kept in that condition. Unnecessary curtains, hangings, bric-à-brac, and furniture should be removed, but enough should be left to make the room comfortable and cheerful.

There is no need of removing the carpet if it is well swept and then wiped off with a damp cloth, nor does the writer consider it necessary to cover the floor with crash or sheeting, as has been suggested. If the room is as clean as a good housewife can make it, there is nothing more on that score to be desired.

As far as the obstetrician is concerned, the only necessary furniture will be a bed or cot (preferably the latter), a small, low table, a chair, and a slop-jar or pail. These should be arranged after the manner shown in Plate III.

The patient or nurse should be instructed to make up the bed or cot, for the labor, in the following way, with absolutely clean bedding and rubber sheeting.

On the mattress is placed a rubber sheet covered with a white sheet, both of which are pinned to the mattress on both sides and at the corners. Over these is placed a draw-sheet,—that is, a large sheet folded in four

thicknesses and spread across the bed from side to side, like a broad belt. It should lie midway between the head and foot of the bed, so that the patient's buttocks will rest on the middle of it, and it must be pinned securely at its corners to prevent its slipping. (Plate II., A.)

Over the draw-sheet is laid a second rubber sheet covered by a second white sheet, both of which are to be pinned securely at the sides and corners. (Plate II., B.) It is important that these various coverings be secured carefully with safety-pins in the manner described. They will not then be disarranged by the struggles of the patient, and may be removed easily and quickly when necessary.

At the conclusion of labor, and after the patient has been washed and made comfortable, the uppermost white sheet and rubber cloth are removed, and the patient lies on the under sheet and rubber, with the draw-sheet passing across the middle of the bed, under her buttocks.

As often as it becomes soiled, the draw-sheet may be removed easily and quickly, and a clean one substituted for it without disturbing the patient or disarranging the entire bed.

Whenever practicable, it is a far better plan

PLATE III.

ARRANGEMENT OF BED, TABLE, AND CHAIR FOR NORMAL LABOR.

to have the labor take place on a cot or large couch, *without* a back, after which the patient can be lifted into the bed that she is to occupy during the puerperium. In this way the physician is enabled to "get at" his patient from all sides,—a great convenience under the most favorable circumstances, and one of inestimable value should any operative procedure become necessary or should an emergency arise.

When a cot is used in this way it should be prepared with the rubber and white sheet only, while the bed in which the patient will spend the puerperium is to be made ready with the other rubber sheet and white sheet and the draw-sheet.

At the conclusion of labor the cot may be used as a sleeping-place for the nurse, who should under no circumstances sleep with the patient.

Nearly every house contains an extension-table with leaves, and the physician will find it a great advantage to have two or three of these table-leaves slipped under the mattress, between it and the springs, before labor begins. This will give a much firmer surface for the patient to lie on, and will prevent the discharges from collecting in a pool under her buttocks. In lieu of the table-leaves an ironing-

board, lap-board, or shelves from a cupboard or bookcase may be used for this purpose.

This matter of the bed has been discussed at considerable length because it is by no means of little importance. A man cannot do good work unless he has proper tools to work with and a good and suitably equipped place in which to work; and yet in no place under the sun are bungling make-shifts so frequently found as in the lying-in chamber.

The physician should take occasion during this preliminary visit to impress upon the patient the necessity for sending for him as soon as labor pains begin, and of having on hand a plentiful supply of hot water as well as the articles which she has already been directed to procure.

If labor is to occur during cold weather, the importance of having the lying-in room warm and comfortable must be insisted upon. A thermometer should hang in the room, and a temperature of from 72° to 75° F. should be maintained.

The physician, having now done all in his power to prepare the woman for her confinement, should endeavor to so arrange his own affairs that, when the time arrives, he can respond promptly to her summons.

PLATE IV.

AN OBSTETRICAL BOX WITH ITS CONTENTS.

V

THE PHYSICIAN'S OUTFIT

THE Physician's Outfit, according to the plan followed by the writer, consists of two distinct parts,—the OBSTETRICAL BOX, which is sent to the patient's house two or three weeks before labor is expected, and the OBSTETRICAL BAG, which he carries with him when summoned to the case. The *Obstetrical Box* (Plate IV.) is made of wood, with hinged cover and lock and key, and is encircled by a strong leather strap serving as a handle. It contains four half-gallon bottles of sterilized or distilled water; one pint of a saturated solution of boric acid; one pint of sterilized sodium chloride solution of twelve-tenths per cent. strength, which, by the addition of an equal amount of boiling water, will make instantly a quart of hot normal salt solution (six-tenths per cent.); three agate trays, 6 x 10 inches and two inches deep, and three temperature charts, each covering one week, attached to a stiff back of binder's board.

With this box at hand the obstetrician is

assured of a plentiful supply of COLD sterile water, which can be raised to any desired temperature by the addition of the requisite amount of boiling water from the kitchen tea-kettle.

In emergencies, such as an unexpected version or forceps operation, and in cases of post-partum hemorrhage, it is of inestimable importance to have ready for instant use a large quantity of water *known to be sterile.* Boiling water, which is, of course, sterile, can usually be had in any amount; but it often happens, in emergency cases, that cold water, teeming with bacteria, is added to reduce its temperature.

The boric acid solution, which is not easily prepared extemporaneously, is used for washing the infant's eyes and mouth as soon as the head is born.

The salt solution will rarely be needed, but it takes up very little room in the box and can be made ready for use instantly should occasion require. The agate trays, together with the two basins to be provided by the patient, insure a sufficient number of receptacles for towels, sponges, and the various solutions, while the temperature charts will, of course, be needed throughout the puerperium. One of these boxes, with its contents, costs very

little (less than three dollars), and the physician should provide himself with a number of them sufficient to meet the requirements of his practice.

The box is to be kept in a safe place at the patient's house until labor begins, when it is to be unlocked by the physician and the various articles taken out for use, by him or by the nurse under his immediate supervision.

The OBSTETRICAL BAG, which the physician carries with him when he is summoned to the labor, consists of an ordinary suit case containing the following articles:

A. APPLIANCES.

One *Block-tin Douche-pan.*

Two *Copper Trays*, 5 x 15 inches and two and one-half inches deep, for boiling the instruments. They are made of a size to hold any obstetrical forceps, together with such other instruments as may be required, covered by the minimum amount of water, to insure rapid boiling.

One *Leg Holder*, made after the writer's pattern (Fig. 9).

One *Kelly Pad* of large size, with apron and *not* with sleeve.

One *Small Scales* for weighing the infant, rolled up in a canton flannel hammock, in which the child is placed to be weighed (Fig. 4).

B. DRUGS.

Whiskey, six ounces.
Chloroform, six ounces.
Fld. Ext. Ergot, six ounces.
Acetic Acid, six ounces.
Lysol, six ounces.
Potassium Permanganate, four ounces.
Oxalic Acid, four ounces.
Sodium Carbonate, four ounces.
Ether, for anæsthesia, 250 grammes.
Iodoform, small vial.
Boric Acid, small vial.
Bichloride Tablets, one bottle.
Sterilized Vaseline or "*Lubri-Chondrin*," one tube.

C. DRESSINGS.

Iodoform Gauze, five per cent. sterile, one yard.
Plain Gauze, sterile, two yards.
Plain Gauze "*Wipes*," four inches square, sterile, in a small tin can.
Absorbent Cotton "*Sponges*," sterile,

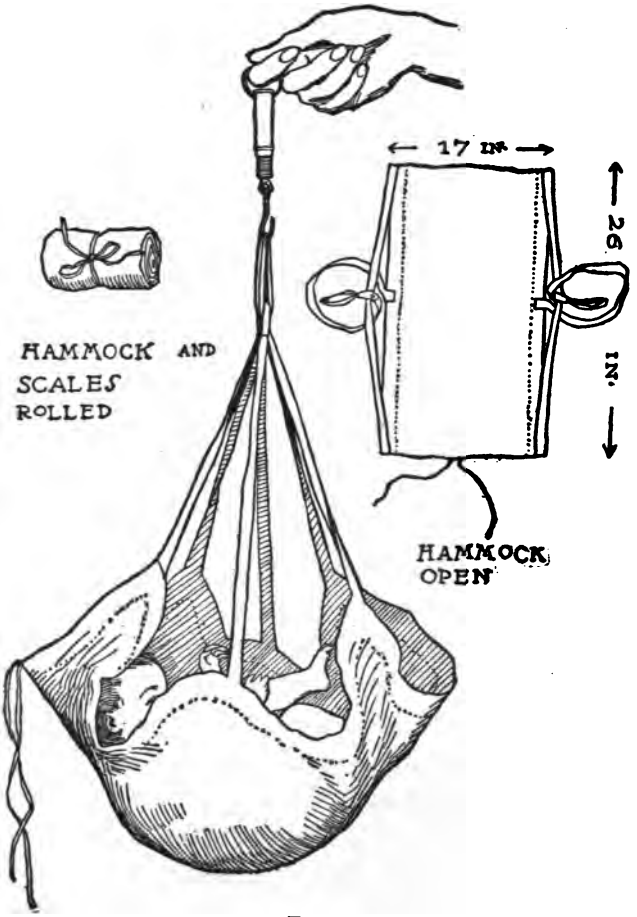

FIG. 4.

Scales and hammock for weighing infant.

in tin can (baking-powder can answer this purpose admirably).

Tapes and Dressing for cord, sterile, in wide-mouthed two-ounce glass bottle or jar. The cord dressing is placed in the bottom of the jar, covered with a piece of absorbent cotton; on this are laid four pieces of linen bobbin tape, each eight inches long, covered by another layer of absorbent cotton. After the jar, with its contents, has been sterilized, it is closed with an ordinary cork or with a screw top.

D. INSTRUMENTS.

One *Obstetrical Forceps*, of such pattern as the physician may prefer.

One *Female Catheter*, glass or metal.

One *Scissors* for cutting cord.

One *Scissors* for other purposes, such as cutting gauze or sutures.

One *Thumb Forceps.*

One *Double Current Douche-tube.*

One *Abbe Needle Holder.*

Four *Needles*, two straight and two curved, of different sizes.

One *Long Sponge Holder*, for packing

the cavity of the uterus or for sponging out the vagina.

One *Volsellum*, for drawing down the cervix.

Six *Serrefines*, for securing the untied ends of sutures (Fig. 11).

Medium Silk Sutures, in sterile vials.

Medium Catgut Sutures, in sterile vials.

Twelve *Strands of Silkworm Gut*, which may be sterile, in test-tube, or boiled just before use.

E. MISCELLANEOUS.

One *Douche Bag*, four quarts.

One *Ether Inhaler*.

One *Chloroform Inhaler*.

One *Rubber Apron*.

One *Clean Muslin Apron*.

One *Muslin Operating Gown*, sterile, and contained in a small bag (Fig. 5).

One *Pair Rubber Leggings*, to cover the patient's legs in case of a prolonged operative delivery.

One *Box Rubber Finger Cots*, to be used in case a rectal examination becomes necessary.

One *Soft Rubber Catheter*, for withdrawing mucus from the infant's throat.

One *New Nail-Brush*, to be replaced after every case.

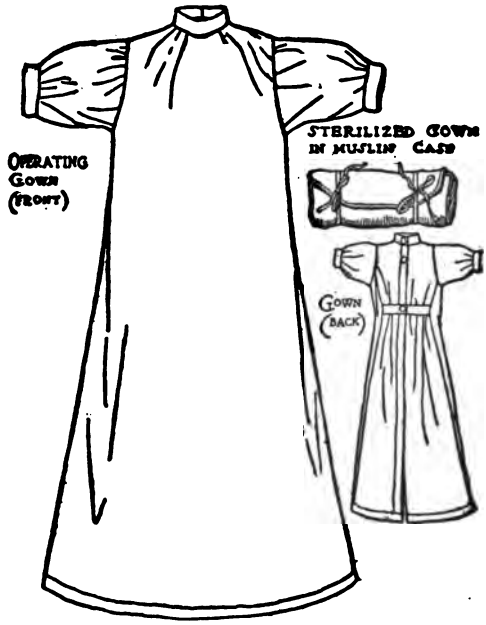

FIG. 5.

Operating gown and case in which it is sterilized.

The above list may seem, at first sight, rather formidable, but the reader will find that, with a little ingenuity, the articles can easily be packed in the bag.

The instruments should be wrapped in a towel or carried in canton flannel cases, and will lie comfortably in one of the copper trays. The bottles containing liquids should be provided with metal screw cases, and, with the other articles, can be packed in and around the douche-pan.

As everything for use about the patient is either sterilized on the spot, by boiling, or contained in a germ-proof case after previous sterilization, and as the bag itself is not brought into the lying-in room at all, the necessity for any of the so-called aseptic bags made of canvas or asbestos is entirely obviated.

With such an armamentarium the obstetrician will feel a sense of security that must be experienced to be appreciated. To perform the most difficult obstetrical operation, he will need, in addition, only the requisite number of assistants, and possibly an axis-traction forceps or a cranioclast.

VI

PREPARATION FOR LABOR

THE patient should be instructed to send for the physician as soon as labor pains begin. If he arrives too soon, he can go home again; while if he comes too late irreparable mischief may have been done. After the messenger has been despatched for the doctor, the patient should receive an enema consisting of soapsuds, one pint, to which one drachm of spirits of turpentine has been added.* This will effectually empty the lower bowel, and render the labor not only safer and easier but infinitely more cleanly.

The tendency of an overloaded bowel to cause uterine inertia has already been referred to.

She should then receive a thorough general bath with plenty of soap and warm water, either in the tub, if the pains are not severe, or in the form of a sponge bath; assisted, in any event, by the nurse or by some other capable person.

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* See Appendix C.

After the bath, her hair is to be well brushed and braided in two braids, and she is to be dressed in a clean night-gown, clean stockings, and slippers, over which she will wear a wrapper or bath-robe that can be slipped off and on easily.

While the patient is occupied with her bath the lying-in chamber is to be made ready for the labor, according to instructions. The bed or cot is to be properly made up, a chair placed at the right side, facing the head, for the physician, and a table (preferably a low cutting-table) covered with clean, white towels placed within easy reach of his right hand (Plate III.).

The patient's genitals should now be bathed with a solution of lysol (℥ij to the pint) made with boiled water, and the vulva covered with a clean sanitary pad held in place by a band around the waist.

From this moment the use of the water-closet must be forbidden absolutely.

Evacuations of urine and feces must be received in a clean chamber, which is to be removed at once from the room, emptied, cleaned thoroughly, and returned with as little delay as possible. The vulva pad, which must, of course, be removed when the rectum or

bladder is emptied, is, in every instance, to be replaced by a fresh, clean one.

The nurse, or other attendant, should see that the lying-in room is warm, well-lighted, and arranged according to directions; that there is a good fire in the kitchen stove, unless a gas stove is available, and that plenty of water is actually boiling; that the instructions relative to the patient have been conscientiously carried out; and, lastly, that all children and other unnecessary individuals have been gotten out of the way.

The further management of the case lies entirely in the physician's hands.

VII

NORMAL LABOR

SOME one has said, "If you have accepted an invitation to dinner, *Go*, if you are alive; if you are dead, send your executor!"

To an even greater degree is a physician, who has undertaken the management of an obstetrical case, under obligation to respond promptly to the summons of his patient. If he is in attendance on another case he cannot be blamed for delay; but he should never be found at the theatre, or engaged in other unnecessary matters, when a patient, from whom he has reason to expect a call, requires his services.

The life of an obstetrician is not an easy one, and the man who enters it has no right to shirk its least requirement.

On arriving at the house, the accoucheur may properly proceed at once to the lying-in chamber and greet the patient with a few words of cheerful encouragement. She may have a labor pain while he is in the room, and he will be afforded an opportunity to judge of

its character and strength, and of the necessity, if it exists, for haste in completing the preparations for delivery.

These matters attended to, the physician will retire to an adjoining room and prepare himself for the initial vaginal examination.

The OBSTETRICAL BOX, which is already there, should be unlocked and its contents removed. The OBSTETRICAL BAG, which he has brought with him, is to be opened and the douche-tube, forceps, catheter, and scissors for cutting the umbilical cord put to boil in one of the copper trays, only enough water to completely cover them being used, with the addition of a small amount of sodium carbonate, say, one-half drachm, to keep them from tarnishing. He is now to remove his coat, roll his shirt-sleeves up as high as possible, and put on, first, the rubber apron, and then the muslin apron, and proceed to disinfect his hands.

The fact must never be lost sight of that, while the rubber apron is worn to protect the physician's clothing, the muslin apron and gown are solely for the purpose of preventing infection of the patient.

For this reason the obstetrician must never trust to finding an apron at the patient's

PLATE V.

ARRANGEMENT OF SHEETS FOR VAGINAL EXAMINATION.

house, but should bring his own, freshly laundered, and his own sterile gown, which has not been removed from its little bag since it was sterilized. If several weeks have elapsed since he has been in contact with any contagious or infectious case (including, of course, suppurating wounds of every sort), the following method of disinfecting the hands will suffice:

1. Clean the nails, dry.

2. Scrub the hands and forearms for ten minutes with nail-brush, Tr. green soap, and hot water, changing the water frequently.

3. Soak them for two minutes in bichloride of mercury solution, 1–1000.

4. Wash off bichloride solution with *sterile* water.

If, however, the physician has any reason to be bacteriologically suspicious of himself, the following method of disinfection should be adopted:

1. Clean the nails, dry.

2. Scrub the hands and forearms for ten minutes with nail-brush, Tr. green soap, and hot water, making frequent changes of the water.

3. Soak in a hot, saturated solution of permanganate of potash, made with sterile water, until the skin assumes a deep mahogany color.

4. Decolorize by soaking them in a hot, saturated solution of oxalic acid.

5. Wash off oxalic acid with plain sterile water.

In the disinfection of the hands as much care must be bestowed upon the SIDES *of the fingers as upon the palmer and dorsal surfaces.*

During this process of sterilization the nurse will prepare the patient for examination. The woman is to lie on her back, on the right side of the bed near the edge, covered with two clean sheets, each folded in half and arranged as follows: one sheet is to lie across the bed, covering her lower limbs and extending from the foot-board to a point about midway between the patient's knees and hips; the other, covering the rest of her body, also lies crosswise of the bed and overlaps the first by a few inches. (Plate V.) Before the sheets are finally adjusted the nurse will remove the sanitary or vulva pad and carefully bathe the external genitals with warm lysol solution (two per cent.) and a fresh piece of absorbent cotton. The physician, having completed the disinfection of his hands, must not, of course, allow them to come in contact with any *unsterile* object, such as his eye-glasses, hair or beard, or a door-knob, jar cover, or any of the bed-

PLATE VI.

VAGINAL EXAMINATION.

clothing. The nurse will now squeeze some sterilized vaseline or other suitable lubricant* on his index and middle fingers from a collapsible tube, taking care that neither the tube nor her own hand comes in contact with the examining fingers. The patient should be directed to flex and widely separate her knees while the nurse raises the upper of the two sheets so that the physician can *see* the vulva, and holds it in such a position that it cannot come in contact with his hands, while it serves as a screen to prevent the woman from appreciating the extent to which she is exposed. (Plate VI.)

He then, with the thumb and finger of his left hand, separates the labia as widely as possible, so that the vulval canal is practically obliterated. Now, "*by the sense of sight* the examining fingers are passed, as nearly as possible, through the centre of the opening in the hymen, the greatest care being used to prevent contact of the fingers with the adjacent parts before the introitus vaginæ is reached." (Edgar.)

* The writer uses, in place of vaseline, a preparation known as "Lubri-Chondrin," which is not oily, and which may be removed instantly from the hands or instruments by means of water alone.

In this way, and in this way only, can the transference of septic material into the vagina be avoided. Vaginal examinations should never be performed under cover of the bed-clothes or of the patient's garments, for the most painstaking disinfection of the hands will come to naught if the fingers are to be rendered septic again by contact with the labia majora, covered with hair and alive with pathogenic bacteria.

This preliminary vaginal examination must be conducted with every imaginable care to avoid accidental and premature rupture of the amniotic sac; but it should be as thorough as possible, and should never be omitted. It is not unusual to find even a primipara with the head well down on the perineum and the second stage of labor fairly established after but an hour or two of pains of little severity.

The obstetrician should learn the condition of the vagina, pelvis, and cervix, and make out, if possible, the position and presentation of the fetus. He can then decide intelligently whether or not the case demands his constant attendance, and, if so, whether the woman should remain in bed or be kept on her feet.

The physician may safely leave the house for an hour or so, provided the pains are slight

and occur at irregular and widely separated intervals, and if the cervix is not dilated more than an inch; but even under these circumstances he should always arrange to be within easy call.

If, however, he finds, on questioning the patient or nurse, that the pains are recurring with increasing frequency and with regularly graduated periods of time between them, and if the external os uteri has attained a size equal to, or greater than, the classic silver dollar, he must remain with the case until the labor is concluded. By this time the douche-tube, thumb forceps, catheter, and cord scissors will have been boiled sufficiently and should be removed from the fire, care being taken to allow *nothing* to come in contact with the instruments or with the *inside* of the tray or its cover.

The *covered* tray with its contents should then be placed on the table ready for use, unless the probable occurrence of delivery is very remote, when the instruments and tray may be wiped dry and set aside, *to be boiled again before they are used.*

It is always safer to put these instruments to boil immediately on arrival at the house, for they *may* be required by the time the physi-

cian has finished the initial disinfection of his hands. If, when needed, they are too hot for use, some of the cold sterilized water from the bottles in the OBSTETRICAL BOX may be poured over them.

Assuming that labor is proceeding with sufficient rapidity to necessitate the continued presence of the physician, he should begin at once his preparations for delivering the woman.

The nurse should be directed to make two quarts of 1–2000 bichloride of mercury solution and two quarts of a two per cent. lysol solution (two and one-half drachms to the pint), using for this purpose boiled water of a temperature of 100° F. She should also prepare two dozen small pledgets of absorbent cotton from the roll furnished by the patient.

It will be remembered that the physician has for use two copper trays (from the OBSTETRICAL BAG), two wash-basins (provided by the patient), and three smaller agate trays or basins (from the OBSTETRICAL BOX).

For convenience of description, these trays will be numbered as follows:

1. Copper Tray.
2. Copper Tray.
3. Wash-Basin.
4. Wash-Basin.

5. Small Agate Tray.
6. Small Agate Tray.
7. Small Agate Tray.

No. 1 contains the douche-tube, thumb forceps, catheter, and cord scissors.

No. 2 is to be set aside for boiling the obstetrical forceps if they are needed.

No. 3 contains lysol solution (two per cent.) and a good-sized piece of absorbent cotton for sponging off the patient's genitals.

No. 4 contains bichloride solution, 1–2000, for the physician's hands.

No. 5 contains two dozen small cotton swabs in 1–2000 bichloride solution.

No. 6 contains four clean towels (from the dozen provided by the patient) thoroughly saturated with the bichloride solution.

No. 7 is to be used for receiving the placenta, and should be wrapped in a wet bichloride towel.

In addition, two clean cups or tumblers are obtained and half filled with boric acid solution. Three of the small sterile gauze "wipes," from the tin box in the OBSTETRICAL BAG, are placed in each cup. These cups, with their contents, are for cleansing the infant's eyes and mouth immediately after the birth of the head.

The Kelly Pad is now to be inflated and placed on the bed with the apron extending over the side into the slop-jar or pail. (Plate III.)

On the table should be placed the solution of bichloride (in Tray 4), the bichloride sponges (in Tray 5), and the bichloride towels (in Tray 6). With them should be Tray 1, with the douche-tube, thumb forceps, catheter, and cord scissors, the two cups containing the boric acid solution, the glass jar containing the cord tapes and dressings, and the following bottles from the OBSTETRICAL BAG:

Whiskey.
Ergot.
Acetic Acid.
Chloroform. (Plate VII.)

The stoppers of all these bottles should invariably be loosened, so that there may be no delay in case one is needed. The chloroform bottle should be provided with a dropper cork, and the chloroform inhaler should be placed beside it.

The Douche Bag (Fountain Syringe) is to be flushed out with bichloride solution (1–1000), filled with hot lysol solution (two per cent.), and suspended from a convenient nail

PLATE VII.

ARRANGEMENT OF TABLE FOR NORMAL LABOR.

or from the chandelier, about three feet above the level of the bed.

If the labor is prolonged, so that there is danger of the various solutions, sponges, etc., growing cold, the nurse should add to them, from time to time, enough boiling (and therefore sterile) water to keep their temperature up to the desired point.

When, however, the labor is progressing vigorously, the physician should keep himself informed as to the descent of the presenting part by means of repeated careful abdominal palpations supplemented in proper instances by one or more vaginal examinations, according to the requirements of the case.

These vaginal examinations should not be made oftener than is absolutely necessary, and it is needless to say that they must be performed with all the aseptic precautions that were observed in the first instance; but if the hands have once been disinfected by the permanganate method, this step need not be repeated. Cleaning the nails dry, scrubbing for five minutes with the nail-brush, Tr. green soap, and hot water, and immersing in the bichloride solution for two minutes, will suffice. When the time comes for the woman to take to her bed, she should lie on her back,

on the right side, near the edge, with her buttocks resting in the Kelly Pad and her nightgown rolled high up under her shoulders. A clean towel, wrung out of the bichloride solution (Tray 4—*not* one of the towels already prepared, which are for future use), should be placed under the patient's buttocks by the nurse, who then bathes the external genitals with the lysol solution, removing the vulva pad for this purpose, and not replacing it.

In the meantime the physician will remove the muslin apron which he has worn since his first disinfection, and put on, instead, the sterilized operating gown, leaving the rubber apron underneath. The nurse should untie and open the little bag in which the gown is rolled, and the physician should remove the gown without touching the bag. After he has put it on, the nurse will button it up in the back for him, in order to avoid any possibility of infecting his hands. He now takes his place in the chair by the side of the patient, facing her face, while the nurse is stationed at the head, or on the opposite side of the bed, so that she can hold the patient's hands during the pains and encourage her in every way possible.

If it becomes necessary to rupture the membranes at this point, a soft bichloride towel

PLATE VIII.

RUPTURING MEMBRANES.

PLATE IX.

LABOR IN LATERAL POSITION.—FIRST METHOD.

should be held closely against the vulva to receive the gush of waters and prevent soiling the bed. (Plate VIII.)

Before the presenting part has descended far enough into the pelvis to render catheterization difficult the bladder must be emptied. Neglect of this rule will result, invariably, in prolonging the second stage of labor, even if nothing more serious occurs.

As soon as the head comes down sufficiently to distend the perineum, the woman should be placed on her left side, with her buttocks near the edge of the bed and her thighs and legs flexed. A pillow may be placed between the knees or the right leg may be supported by the nurse. The perineum is now in plain view, and the labor may be conducted in a far more cleanly manner than in the dorsal position.

If the patient lies quietly during her pains, the physician may rest his left forearm on her uppermost hip and keep both hands posterior to her thighs during the expulsion of the head (Plate IX.); but should she struggle to any great extent, and try to "get away" from the accoucheur, she can be controlled far more effectually if his left hand is passed over the abdomen and mons veneris and between the thighs to the vulva. (Plate X.)

It must be remembered that this is done at the risk of infecting the hand, which, consequently, should be wrapped in a wet bichloride towel until it has reached the desired position. Once in place, the hand should not be withdrawn until the delivery of the head is accomplished; it should then be immediately immersed in the bichloride solution.

If the perineum seems in danger, the woman may be directed to assume a modified Walcher posture by extending her legs and arching her back as much as possible; and if the tissues are not sufficiently relaxed by this manœuvre she may be turned on her back and placed in the true Walcher posture, as shown in Fig. 10.

Too much care cannot be shown in the management of the perineum, and it often happens that a slight change in the woman's posture will be the means of saving it from rupture.

At such times as the physician is not occupied with the perineum, he should carefully cleanse the vulva and adjacent parts with a bichloride sponge (from Tray 5), taking care to remove all blood and mucus that may collect. If, during the pains, small masses of fecal matter are expelled from the rectum, they should be carefully removed with the

PLATE X.

LABOR IN LATERAL POSITION.—SECOND METHOD.

PLATE XI.

LABOR IN DORSAL POSITION.

bichloride pledgets, wiping from before backward,—that is, away from the vulva towards the sacrum. Every sponge must be thrown into the slop-jar or pail as soon as it is used, and the greatest pains must be taken to prevent any fecal matter from coming in contact with the fingers. Should such an accident happen, the entire hand must be washed at once, and as thoroughly as possible, in the bichloride solution, after which the nurse will empty the basin and fill it afresh. It is, however, always safer and better to have this cleansing of the anus and its immediate surroundings performed by the nurse instead of by the obstetrician. For this purpose she should have a separate basin of bichloride sponges, for she must not be permitted to touch any of those prepared for the physician's use.

If the towel on which the patient lies becomes soiled with feces, it must be covered *at once* with a fresh bichloride towel.

In delivery in the dorsal position the patient lies with her knees slightly flexed and widely separated, and her buttocks resting in the Kelly Pad, over which has been placed a wet bichloride towel. (Plate XI.) The same general instructions as to surgical cleanliness hold

as in the lateral posture, but the rules are far from being as easy of application.

If chloroform is required during the second stage, the patient's face should be freely anointed with vaseline as a protection against the irritating action of the drug.

Primary anæsthesia may be intrusted to a nurse of average intelligence, the physician keeping track of the pulse at one of the numerous arterial branches near the vulva, and telling her how much chloroform to use, and when to apply and when to withdraw the inhaler; but anæsthetization to the surgical degree should never be attempted by any one but a fellow-practitioner. As soon as the head is born, the mouth is to be thoroughly cleared of blood and mucus with a gauze wipe taken from one of the boric acid cups. Then, with wipes from the other cup, the eyes are to be carefully bathed, a fresh piece of gauze being used for each eye. When the body is born, the infant should be laid on its right side, to favor closure of the foramen ovale, and the nurse will immediately take charge of the fundus uteri.

After taking such steps as may be necessary to secure good respiration in the infant, the physician should again bathe the patient's

PLATE XII.

DELIVERY OF PLACENTA IN LATERAL POSITION.

genitals with bichloride sponges, and then examine the infant carefully for injuries or deformities of any sort.

When the time comes to cut the cord, the tapes for tying it are to be removed from the jar of cord dressings with the thumb forceps to avoid touching the jar. As soon as the cord is cut, the physician will relieve the nurse by taking charge of the fundus with his left hand, while the nurse brings Tray No. 7, into which the maternal end of the cord is to be dropped. *It must be remembered that from now on the physician has but one surgically clean hand—the right.*

Having removed the infant to a safe place, wrapped in the flannel blanket provided for it, and covered with sufficient other wraps to prevent its becoming cold, the nurse will return and hold the tray (No. 7) close against the patient's left buttock and just below the vulva in such a manner as to receive the placenta, with the gush of blood that follows it when it is delivered, either naturally or by expression. (Plate XII.)

In the dorsal position the tray must be held between the thighs, with one corner pressed firmly against the perineum. (Plate XIII.)

The physician, still maintaining his hold

upon the fundus, will now, for the last time, wipe the genitals and surrounding parts thoroughly clean with bichloride sponges or a fresh bichloride towel, and place a clean sanitary pad over the vulva.

The Kelly Pad and its contents are carefully removed by the nurse, who will then place under the patient the obstetrical pad, and the patient is permitted to turn on her back.

Ergot may be given or not, according to the custom of the physician and the requirements of the case. The accoucheur may now, if he thinks proper, direct the nurse to take charge of the fundus, while he proceeds to examine the placenta. This, in all probability, has become inverted during the process of expulsion, and must be turned "right side out," the cord dropped within, the torn edges of the membranes accurately approximated, and the entire mass carefully inspected to see that no portion of it has been left behind in the uterus.

When the proper time comes the binder is adjusted, and, if the confinement has taken place on a cot or lounge, the patient may be lifted into her bed, which has been prepared for her reception in the manner already shown. If she has been confined in her bed, the upper

PLATE XIII.

DELIVERY OF PLACENTA IN DORSAL POSITION.

sheet and rubber cloth should be removed, leaving only the first rubber sheet, white sheet, and draw-sheet on the bed.

The vulva pads will require frequent changing during the next few hours, and the obstetrical pad is to be removed at the end of twelve hours, or sooner if it becomes soiled.

When the child has been weighed and the cord and other matters attended to, the mother's pulse, respiration, and temperature should be taken and recorded on the chart, after which the physician may busy himself recording a careful and accurate history of the labor on the proper History Card. (Appendix A.)

When a full hour has elapsed since the delivery of the placenta, and everything about both patients is entirely satisfactory, the physician may leave the house.

Immediately after his departure, or before, if she has time, the nurse should begin to put the room in order. All soiled articles, as well as the pails, basins, etc., should be removed, and the furniture arranged in proper position. The placenta and all soiled sponges, pieces of gauze, etc., should be burned at once in a brisk fire, while blood-stained towels, sheets,

and the like are to be put to soak in cold water to remove the stains.

This done, the room is to be darkened and the infant removed to another part of the house, so that the patient may, if possible, fall asleep.

The admission of visitors, other than the woman's husband or mother, must be positively denied; but the nurse should see her from time to time in order to keep informed as to her condition.

VIII

THE PUERPERIUM

WHEN making his post-partum visits, the physician should carry a small bag containing the following articles:

Ergot, whiskey, lysol, iodine, iodoform. Iodoform gauze, sterile; plain gauze, sterile; absorbent cotton sponges, sterile; bichloride tablets, vaseline or lubri-chondrin. Catheter, scissors, douche-bag, douche-tube, sponge holder, thumb forceps.

Normal post-partum patients should be visited twice daily for the first week, once daily for two or three days, and then every other day for two or three times. The woman is allowed to sit up on the tenth or eleventh day, and consequently the physician sees her once or twice after she is out of bed.

Women who can afford the time should be kept in bed for the first two weeks; on a couch by day for the third week; and up and dressed, but on the same floor, during the fourth week, after which they may be per-

mitted to go down-stairs once a day for a time before returning to their usual habits.

For the first week the temperature and pulse are to be recorded every four hours; afterwards, night and morning.

With such patients as cannot afford a trained nurse, the following plan should be adopted:

A thermometer is "shaken down" and left with the nurse, with instructions to place it in the patient's mouth for five minutes at 8 A.M., and then remove it and carefully replace it in its case.

The physician makes his first call at noon, or as near to that hour as possible; reads and records the 8 A.M. temperature, takes the noon temperature *and pulse*, shakes down the mercury in the thermometer, and directs the nurse to put it in the patient's mouth for five minutes again at 4 P.M. The second professional call is made as nearly as possible at 8 P.M., when the 4 P.M. temperature is read and recorded and the 8 P.M. temperature and pulse taken and noted on the chart by the physician. The thermometer is then made ready for the 8 A.M. temperature on the following day. Fig. 6 shows a four-hour temperature record made in this way, the nurse being absolutely untrained and little better than a good servant.

The original chart for the first week is reproduced, just as it was returned to the writer at the end of the puerperium.

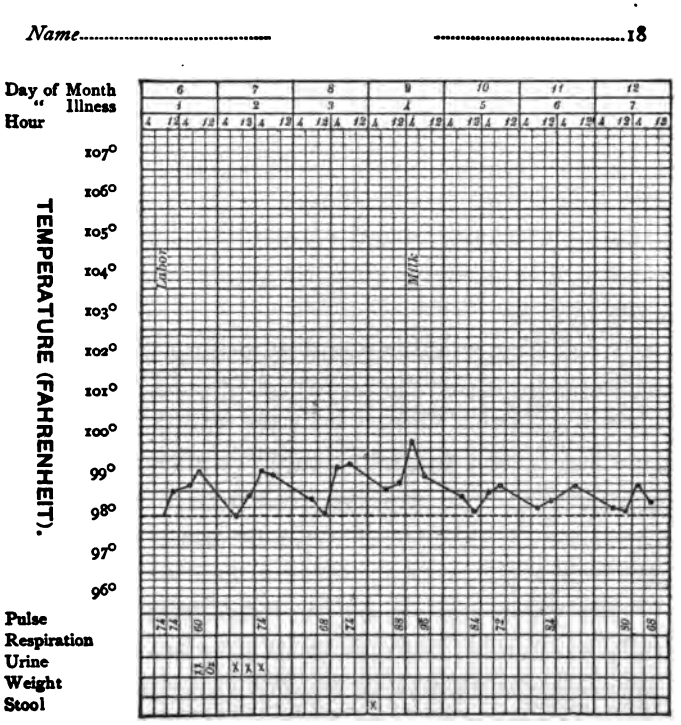


FIG. 6.

L. O. A. normal, 8½ pounds.

If the nurse is not familiar with the use of the clinical thermometer, it will be found necessary to show her which end to put in the pa-

tient's mouth, and to explain to her the importance of having the woman keep her lips closed and breathe through her nose. She must also be directed to leave the instrument in place for five minutes *by the clock*, for, if she makes her own estimate of the time, she will be very apt to remove it too soon.

After the first week, when only daily visits are made, the morning temperature is to be taken by the nurse and recorded by the physician at his evening visit, or *vice versa*, as the case may be.

In addition to taking and recording the pulse and temperature, the physician should, at *every* visit, unpin the binder, palpate the abdomen, and locate the fundus, noting particularly the firmness of the uterine contraction and the presence or absence of pain or tenderness in the belly.

The vulva pad is to be removed and carefully examined, both as to its appearance and *odor*,—a distasteful duty, but one that must never be neglected. The nurse must be instructed to change these pads every four hours during the first week, and oftener if necessary.

If, after the first twelve hours, the pads have to be changed oftener than every four hours, the amount of lochial flow is excessive. From

the first to the third day the discharge looks and smells like ordinary blood, and it usually grows pale and yellowish by the end of the first week. At no time should it have an offensive odor, and it should cease entirely by the end of the month.

Whenever a pad is removed the vulva and adjacent parts are to be bathed carefully with warm lysol solution (two per cent.) and fresh pledgets of absorbent cotton before the clean pad is applied.

It should be a standing rule that once a pad is removed it must invariably be replaced by a fresh one. This rule holds even if the pad has been in position but a few minutes, for, in replacing it, the part that was in the neighborhood of the anus may be laid directly over the vulva.

Before changing the pads or bathing the patient's genitals, the nurse must always scrub her hands thoroughly for at least five minutes with nail-brush, Tr. green soap, and hot water, and then immerse them in bichloride solution, 1–2000, a basin of which is to be kept on hand for the purpose.

This rule should be insisted upon to the letter, and its violation is sufficient cause for dismissing the nurse.

When the patient's bowels move, the vulva should be protected by a fresh pad, held in place by herself or by the nurse, and not to be disturbed or removed until the bed-chamber has been taken away and the anus and surrounding parts thoroughly cleansed with bichloride solution and fresh cotton swabs. If urine is voided at this time, it will be absorbed by the pad.

Catheterization will become necessary if, by the end of twelve hours, the bladder is not emptied naturally; and the operation must be repeated three times a day until normal urination is re-established. The catheter is to be boiled for ten minutes in one of the small agate trays (it will be remembered that the *Obstetrical Box* still remains at the patient's house), and the meatus and adjacent parts thoroughly cleansed with lysol solution and fresh cotton.

The patient is prepared as if for vaginal examination; and the physician, after having disinfected his hands, separates the labia with the thumb and forefinger of his left hand until the meatus is in plain view.

He then, with his right hand, gives it a final cleansing with the lysol solution and a fresh cotton pledget, and takes the catheter *himself* from the tray which the nurse is holding in readiness.

She now squeezes some sterilized vaseline or other suitable lubricant from a tube onto the end of the instrument, and the physician passes it at once into the meatus, guided entirely by the sense of sight, and taking particular pains not to let it come in contact with any of the surrounding parts.

It is a good plan to leave a catheter with the nurse, which she is to put to boil about half an hour before the physician is expected. When it has boiled for the required length of time, she will remove the tray from the fire, cover it with a fresh bichloride towel, and set it aside in a safe place until it is called for.

Catheterization should not be intrusted to the nurse unless the physician is assured that she will observe every detail of the operation with as much care and conscientiousness as he would himself.

In addition to the matters already mentioned, the physician should at every visit inquire into the condition of, and examine if necessary, the patient's breasts and nipples, besides asking the state of her bowels, appetite, and general health.

If her breasts are swollen, tense, and painful, they should be supported by means of a snugly applied muslin breast-binder.

The binder used by the writer is a modification of the Murphy pattern, and, while not so easily made, is more quickly applied and far more comfortable for the patient than its prototype.

The only pins required are for the shoulder-straps and over the sternum, as shown in Plate XIV.

The diagram (Fig. 7) will enable physicians to make a pattern for the binder by enlarging it until each square represents a square inch and tracing in the outline. It is hardly necessary to say that only half the pattern need be made and the binders cut from folded muslin.

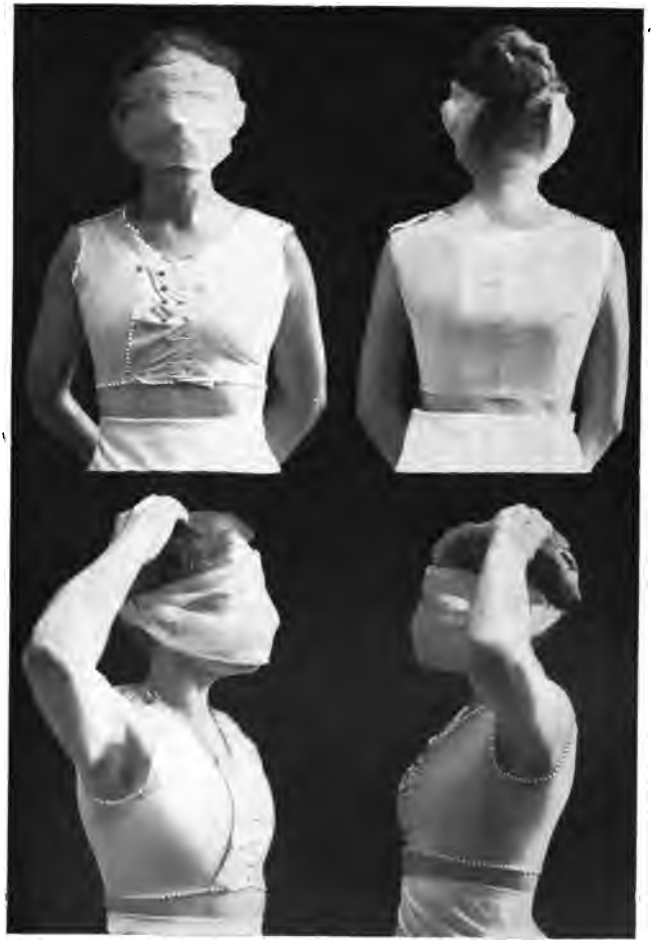
The patient's bowels should be moved on the third day if the natural efforts have failed.

The matter of diet should be in the hands of the physician, and not intrusted to the judgment of the nurse or the caprices of the patient.

The physician should also note, at every visit, the manner in which the nurse performs her duties, and see to it that the patient and all her surroundings are clean and comfortable.

A careful record of the puerperium should, of course, be kept on the proper History Card. (Appendix A.)

PLATE XIV.



AUTHOR'S BREAST-BINDER.

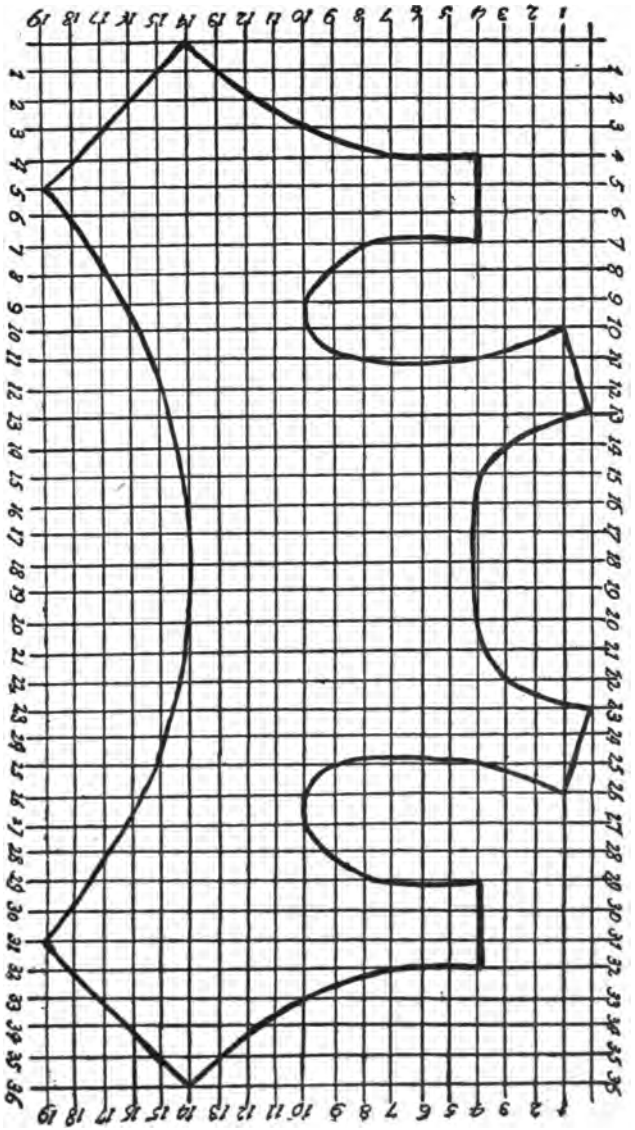


FIG. 7.

Diagram of breast-binder.

IX

THE INFANT

DURING the "physician's hour," that is, the hour that must elapse between the conclusion of labor and the obstetrician's departure from the house, he should, if he has not already done so, carefully examine the infant for deformities and injuries of any sort, and for imperforate anus and hernia.

He must perform or personally superintend the dressing of the cord; make sure that the ligature is tight (retying it, if necessary), and satisfy himself that the child's general condition is all that could be desired. The baby should then be anointed thoroughly with olive oil to facilitate the removal of the vernix caseosa, and wrapped in a warm blanket until the nurse is ready to bathe it, usually about four hours after birth. At every visit during the puerperium, the physician should carefully examine the cord until it comes off, and inform

himself as to the infant's stools, urine, nursing, sleep, temperature, and weight.

The cord is to be dressed every day with fresh cotton or gauze, and the baby must not be bathed in the tub until the navel is healed.

The nurse should be required to use a thermometer for determining the temperature of the infant's bath, for it often happens that a nurse's hands and arms have become so accustomed to hot water that they are surprisingly indifferent to high temperatures.

The baby's eyes and mouth are to be bathed once daily with boric acid solution and fresh gauze or linen wipes, and the mother's nipples must be cleansed with the same solution both before and after each nursing.

The child is to be put to the breast every four hours for the first two days, and then every two hours from 6 A.M. to 10 P.M., and once in the night, at 2 A.M.

Regularity in nursing must be insisted upon, and if the baby appears to be hungry during the first few days after labor, it may be given a five per cent. solution of sugar of milk at the regular nursing intervals until lactation is fully established.

If it cries and is fretful between the feeding

times, small sips of boiled water will usually be enough to satisfy it until the proper hour for nursing arrives.

The normal infant will lose weight steadily for the first few days until ten ounces are lost, and will regain its birth weight by the time it is ten days old, after which it should gain steadily. After the first week any marked loss in weight accompanied by a rise in temperature indicates insufficient nourishment, and steps should be taken at once to correct the condition, either by improving the quality or increasing the quantity of the mother's milk, or by the substitution of some other form of feeding.

Deficiency in the quantity of the milk may be recognized by a rise in the infant's temperature with an accompanying loss of weight; by protracted nursing, lasting more than twenty minutes; by obvious hunger on the part of the infant, causing it to wake regularly before its proper feeding time and cry for food; and by palpation of the breast just before a nursing period, when, under normal conditions, the milk should spurt in a stream from the nipple.

Changes in the quality of the milk which render it unfit for the infant are due to the existence of a supervening pregnancy or to

the presence in it, as shown by the microscope, of blood or pus-cells. Any one of these three conditions is a positive indication for removing the child from the breast.

The return of menstruation need not interfere with nursing unless the woman suffers so severely at her periods that the increase in proteids seriously affects the child. In general it may be said that the child can better undergo a slight digestive disturbance, lasting but a day or two and occurring only once in four or five weeks, than be subjected to the serious intestinal and gastric disorders that often accompany a radical change in diet.

The best substitute for the mother's milk is a wet-nurse, if, as is rarely the case, a thoroughly healthy, good-tempered woman can be secured for this purpose.

The next best thing is "mixed feeding," partly mother's milk and partly an artificial food. This, of course, is only available when the mother is able to nurse the child to a certain extent.

The only artificial food worth considering is fresh cow's milk properly modified by the addition of sugar of milk, lime-water, cream, and water.

Without entering at all into a discussion of

the chemistry of milk, the following simple directions for feeding during the first month will be sufficient.

For convenience in the preparation of the various formulæ, it is best to begin with milk, always from a good, healthy herd, and never from a single cow, containing: fat, twelve per cent.; sugar, four per cent.; and proteid, four per cent. This is called "12—4—4" milk, or "twelve per cent." milk, and all other constituents may be disregarded entirely.

Ordinarily, mixed cow's milk of good quality contains, approximately, four per cent. each of fats, sugar, and proteid matter, and to make "twelve per cent." milk it is only necessary to add to milk of this kind eight per cent. of fat in the shape of cream.

Cream is of two kinds, both of which contain the same percentages of sugar and proteid as in mixed milk, the only difference being in the amount of fat.

"Gravity" cream is that which rises by reason of gravity and is removed by hand with a skimmer, and is to be found in every farmhouse in the country. It contains: fat, sixteen per cent.; sugar, four per cent.; and proteid, four per cent.

"Centrifugal" cream is made with a centri-

fugal machine, and sold in small jars in the cities. It is as thick as or thicker than honey, and contains: fat, twenty per cent.; sugar, four per cent.; and proteid, four per cent.

Remembering that ordinary mixed cow's milk contains four per cent. each of fat, sugar, and proteid, "twelve per cent." milk may be made with "gravity" cream by adding two parts of this cream to one part of ordinary milk, thus:

F. Per Cent.	S. Per Cent.	P. Per Cent.
16	4	4
16	4	4
4	4	4
3)36	12	12
12	4	4

If "centrifugal" cream is used, equal parts of it and ordinary milk will give "twelve per cent." milk, thus:

F. Per Cent.	S. Per Cent.	P. Per Cent.
20	4	4
4	4	4
2)24	8	8
12	4	4

Still another method, which is probably the simplest and most practical for use in cities where milk is delivered in quart bottles filled

and sealed at the farm, consists in removing, with a siphon or a "Chapin Dipper"* (Fig. 8), the upper nine ounces of milk from one of these bottles. Experiment has shown that, by the time these bottles have reached the consumer sufficient cream has risen to give the upper nine ounces of so-called "top milk" exactly twelve per cent. of fat.

FIG. 8.
Chapin Dipper.

Having obtained the "twelve per cent." milk by any one of the three methods described, the next step is to so dilute and otherwise modify it that it will meet the requirements of the infant.

To this end water, in considerable quantity, must be added to reduce all of its constituents, and the deficiency in sugar must be made up by the addition of sugar of milk. Lime-water is also needed to insure the alkalinity of the finished product.

The following table shows the various formulæ required by an average infant during the first thirty days of its life, using "twelve

* The "Chapin Dipper" holds exactly one fluid ounce. One dipperful of granulated sugar, or *one and one-half* dipperfuls of sugar of milk is the amount required for each twenty ounces of food. In removing the "top milk" the first dipperful should be taken out with a teaspoon, or the milk will overflow.

per cent." milk as a basis. For more detailed information on this most interesting subject the reader is referred to any of the standard works on Infant Feeding, notably Rotch's "Pediatrics."

Milk Sugar.	Lime-Water.	12% Milk.	Water.	Result. F.	S.	P.	Day.	Amt.	Number Feedings.
				%	%	%			
℥j	℥j	℥j ℥ij ℥iij ℥iv	Up to ℥xx	.60 1.20 1.80 2.40	5 5 5 5	.20 .40 .60 .80	2nd 3rd–4th 4th–7th 7th–30th	℥ss–j ℥j–iij ℥j–iij ℥iij–iv	6–8 10 10 10

Bearing in mind that vomiting and diarrhœa unaccompanied by fever and other constitutional symptoms indicate an excess of fat, and that constipation, with curds and putty-like stools, shows an excess of proteid, it is not a difficult matter to keep a healthy child in a healthy condition, provided proper methods of feeding are followed carefully from the first and suitable changes in the formulæ are made the instant the necessity for them arises.

To "dry up" the breasts when nursing is contraindicated and the infant is given to a wet-nurse or put on the bottle, it is only necessary, after thoroughly emptying the breasts, to surround them with smooth layers of absorbent cotton and apply a very snug breast-binder

through which holes for the nipples have been cut. Beyond limiting the amount of fluids ingested and opening the bowels freely with salines, nothing more need be done, and, more than anything else, the glands should not be stimulated by the use of the breast-pump. Under this treatment the breasts will at first become very hard, but they will soften again and be entirely free from milk in from three to five days. During this period the binder should not be disturbed. If, as will very rarely happen, the temperature should rise suddenly, indicating the onset of mastitis, it may usually be aborted by the application of an ice-bag over the breast-binder after again emptying the glands, accompanied by the free administration of salines.

To be successful, this abortive treatment must be instituted the instant that symptoms develop, and when it is begun at once and is properly carried out it rarely if ever fails to be effective.

The infant's diapers are to be changed as often as they become wet or soiled, and the child must be kept sweet and clean at all times.

Anise-seed tea, "mother's comforters," sugar-teats, and similar abominations should be positively forbidden.

After the physician has discontinued his visits, the parents will be at liberty to do as they please in such matters, but as long as he is in charge of the case he should refuse to countenance anything of the sort.

X

FORCEPS, VERSION, AND CRANIOTOMY

THE preparations for forceps operations, version, and cranioclasis being essentially the same, one description will answer for all.

As none of these operations is, as a rule, undertaken until labor has been in progress for some time, it may be assumed that all preparations for a normal delivery have been made.

If instruments are to be used, the required ones (forceps or cranioclast and perforator) are put to boil in copper Tray No. 2, together with the following:

Catheter.
Scissors.
Volsellum.
Sponge holder.
Needle holder.
Straight and curved needles.
Six strands of silkworm gut.

Only enough water is used to completely cover the instruments, and a small amount of

PLATE XV.

ARRANGEMENT OF TABLE FOR FORCEPS OPERATION.

sodium carbonate may be added to prevent tarnishing. On the table, in addition to the articles required for a normal case, should be placed the following:

Sterilized silk suture in glass tube.
Sterilized catgut suture in glass tube.
Plain sterile gauze.
Iodoform gauze.
Iodoform. (Plate XV.)

The nurse is to prepare an additional supply of bichloride sponges and bichloride towels, and see to it that the solutions on hand are of the required temperature and in sufficient quantity.

While these steps are being taken, the patient is to be anæsthetized, *invariably by another physician*, and no attempt should ever be made to apply the blades of the forceps until complete surgical narcosis is secured.

It is far safer to apply forceps without any anæsthesia at all than to undertake the operation when the patient is but partially under the influence of the drug and in the stage of excitement only. Not long ago, in New York, forceps were used when anæsthesia was incomplete, and the woman suddenly sprang up in bed and sat down with her entire weight on the handles of the instruments, forcing the

blades through the uterine wall and lacerating the abdominal viscera to such a degree that she died in a few hours, although cœliotomy was promptly and skilfully performed. Had it not been for the exciting effect of the anæsthetic she probably could have controlled herself properly.

Unavoidable conditions and complications may, of course, set any rule at naught; but the obstetrician never should administer the anæsthetic himself, or intrust it to a nurse, if the services of another practitioner can be obtained. This is not only on account of possible accidents, but also because the accoucheur cannot anæsthetize the woman and at the same time keep himself, his instruments, and the birth canal in an aseptic condition.

While the patient is being anæsthetized the physician should inspect his instruments and accessories and see that everything likely to be needed is at hand and conveniently placed. Nothing is more unworkmanlike than to attempt even a simple operation before every detail has been carefully rehearsed, and yet the most shiftless methods are followed by many general practitioners in the course of their obstetric work, as every consulting obstetrician knows.

When the patient is completely anæsthe-

tized, her knees and hips are to be well flexed on her abdomen and held in position by some simple form of leg holder.

For several years the writer has made use of the one shown in Fig. 9.

It consists of two stout leather straps, forty inches long, securely fastened to a thick canton-flannel pad eight inches square and twelve inches distant from the buckle ends. The straps are not crossed, but lie parallel to each other and four inches apart. Each strap is provided with a small pad of canton flannel placed between the large pad and the buckles to protect the patient's shoulders. Two clean towels are tied with a square knot by diagonally opposite corners rather snugly around the patient's legs just above the knees, and the large, square pad is placed under her back, with the buckle ends of the straps extending one over each shoulder. The legs are now flexed in the required position, and the long ends of the straps passed

FIG. 9.
Author's leg holder.

under the towels that encircle the thighs and into the buckles, each side being pulled up snugly and into the same buckle hole as the other.

Towels are used around the legs instead of regularly made loops because they are *clean* and fresh for each patient. Care should be taken to tie them with a square knot and with sufficient snugness to prevent them from slipping along the thigh towards the body when the straps are drawn up. The woman cannot "get away" from this appliance, nor can she injure herself if she struggles; while the legs have a tendency to fall widely apart as soon as her muscles are fully relaxed by the anæsthetic. Moreover, the anæsthetist can turn the head easily in *either* direction, a manœuvre not possible with any form of leg holder that passes under the arm and over the opposite shoulder; yet of the greatest convenience if the patient vomits or becomes asphyxiated.

The leg holder having been properly adjusted, the patient is to be turned half-way around in the bed, with her back resting in the Kelly Pad and her buttocks extending well beyond the edge of the mattress. Care must be taken that her night-dress is well rolled up

IMPROPER POSITION FOR FORCEPS, VERSION OR CRANIOTOMY.

The Kelly Pad is too far forward and the patient too far back on the bed. A common error.

and that the Kelly Pad is in such position that neither it nor its apron will be in the way of downward traction. (Plate XVI.) The legs are now encased in the rubber leggings (Plate XVII., A) and covered with fresh bichloride towels securely fastened with safety-pins; another bichloride towel is placed under the buttocks, and still another over the abdomen. (Plate XVII., B.)

The physician will now disinfect his hands for the last time while the nurse is bathing the patient's genitals and all uncovered parts with warm bichloride solution and fresh absorbent cotton.

If labor has been in progress for a long time and the vagina is hot and dry, a hot lysol douche (two per cent.) may be given. (See Chap. XIII.)

*The position of the presenting part must now be made out accurately, and the bladder must invariably be emptied with the catheter.**

If instruments are to be used, the nurse will have removed them from the fire and placed them on the table by the physician's side,

* It is said that Professor McLane was in the habit of keeping a catheter tied to one of his forceps blades lest he should forget this simple but highly important step.

cooling them if necessary by pouring some cold sterile water into the tray.

When everything is ready, *and the patient has been catheterized*, the nurse will squeeze a sufficient amount of sterilized vaseline or lubri-chondrin on the physician's hands, if a version is to be performed, or on the forceps blades as he removes them from the tray in which they have been boiled.

FIG. 10.

Modified Walcher posture.

If, when the head begins to distend the perineum, danger of rupture seems imminent, the anæsthetist should unbuckle the straps of the leg holder while the nurse lowers both legs until the feet rest on the floor. This constitutes the *Walcher* posture (Fig. 10), and it

PLATE XVII.

A

B

PROPER POSITION FOR FORCEPS, VERSION OR CRANIOTOMY.

A, first stage; *B*, second stage.

will be found that when the woman is so placed the formerly tense perineum is relaxed to a considerable degree, and may often be saved when it would otherwise be torn.

While this posture undoubtedly relaxes the perineum and favors rapid and safe delivery at the end of the second stage, it is also said that the true conjugate diameter of the brim is, at the same time, lengthened by at least one centimetre. Consequently, it should be tried whenever, in a high forceps operation, difficulty is experienced in getting the head to enter the pelvis.

The writer has found that considerable skill is required to *apply* the forceps when the patient is in the Walcher posture, and that it is occasionally quite impossible to do so. For this reason the instruments should be adjusted while the patient is in the lithotomy position, after which the straps of the leg holder are loosened by the anæsthetist and the legs lowered by the nurse. To accomplish this change of position properly and safely the nurse should stand close behind the operator and grasp the patient's ankles firmly, holding both legs in their original positions until both straps have been released. The limbs are then to be lowered carefully and simulta-

neously until the feet rest on the floor, while the operator steadies the instruments and protects the soft parts. The patient, of course, should be completely anæsthetized at this time, lest she injure herself by struggling.

If the woman is lying on a table instead of a bed her feet should rest on chairs, for it will be found that, if her buttocks are as far forward as they should be for proper instrumental delivery, she will be in danger of slipping from the table if her legs are permitted to hang loosely over the edge.

A rolled blanket or a thick pillow placed under the back adds somewhat, though very slightly, to the advantages gained by the Walcher posture.

If, in spite of every precaution, the cervix or perineum is torn, the instruments for immediate repair are at hand and ready for use; while if hemorrhage follows the operation, gauze, for packing the uterus, as well as acetic acid, or ergot, may be had without a moment's delay.

After the birth of the child the further points in technique do not differ from those of normal labor.

If craniotomy is to be performed, the position of the patient and all other preparations for

the operation are the same as for delivery by forceps or version.

The scalp of the fetus must be grasped firmly with the volsellum and securely held during the insertion of the perforator and the removal of the bone fragments.

A sterilized soft rubber catheter and a new Davidson syringe will be needed for washing out the brain substance before the cranioclast is used, and the greatest care must be taken to prevent injury of the soft parts by the sharp edges of the broken bones.

The increased liability to shock after operative delivery of any sort must never be forgotten, and provision should be made for applying heat to the patient's body if she goes into collapse. Ordinary lager-beer bottles filled with hot water are most convenient on account of the rapidity with which they can be securely corked by means of their patent stoppers. In their place hot bricks, hot flat-irons, or hot stove-lids may be used. At the beginning of every operative delivery, some member of the family should be detailed to make ready the hot-water bottles or their substitutes, so that there will be no delay if they are wanted.

XI

PERINEORRHAPHY : TRACHELORRHAPHY

It is not the province of the obstetrician to furnish occupation for the gynæcic surgeon, and he should use every effort to prevent injuries to the soft parts during the birth of the child. When, however, in spite of every precaution, these accidents occur, *all* lacerations of the perineum and vaginal walls and extensive tears of the cervix must be repaired at once if the patient's condition is good, or, if she is greatly exhausted, some time within twenty-four hours after the conclusion of labor.

Slight perineal tears may be sutured while awaiting the birth of the placenta, the stitches being tied after the secundines are delivered. General anæsthesia is necessary for the repair of deep lacerations, and desirable in any event. The patient is prepared for operation as for forceps delivery (Plate XVII.), care being taken to bring the buttocks well beyond the edge of the mattress. The vulva, perineum,

and adjacent parts are to be disinfected thoroughly in the manner already described, and the field of operation surrounded with fresh wet bichloride towels.

The operator will sterilize his hands as for a vaginal examination.

The following instruments are required:

Volsellum.
Scissors.
Thumb forceps.
Six serrefines.
Large and small curved needles.
Needle holder.
Silkworm gut.
Large sterile gauze or cotton tampon for vagina.

The instruments and silkworm gut are to be boiled for ten minutes in one of the copper trays, cooled with cold sterile water, and placed on a table by the side of the physician, who sits in a chair directly facing the patient's buttocks. The perineum and lower part of the labia majora should be shaved, or the hair clipped short with scissors. If the cervix is torn, it is to be drawn down to the vulva with the volsellum, wiped clean with sterile cotton sponges and boiled water, and repaired first. The sutures should be of silkworm gut. A

large tampon is then placed in the vagina to prevent blood from the uterus flowing over the field of operation, and the perineal laceration cleansed, trimmed, and sutured. All the stitches are to be inserted before any are tied,

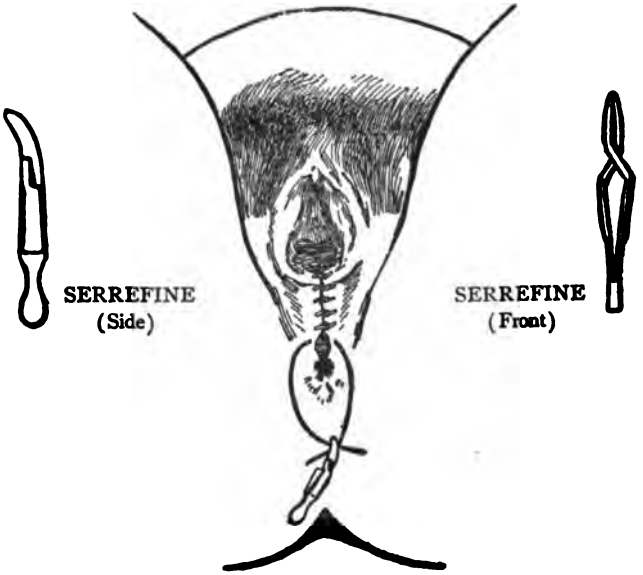


FIG. 11.

Showing method of grasping suture ends with serrefine.

the two ends of each suture being grasped with a serrefine before the next is taken. (Fig. 11.) When all are in place, the wound is to be cleaned carefully for the last time, the edges approximated, and the stitches tied from

within outward. Care must be taken in removing the tampon from the vagina that no stitches are dragged out with it. The wounded area is then to be dusted with iodoform and a clean vulva pad applied.

The woman lies on her back with her legs close together, and the bowels are moved every second day.

Cervical stitches remain in position for five weeks; those in the perineum may be removed at the end of ten or twelve days.

XII

SYMPHYSEOTOMY

For symphyseotomy three assistants are required,—one to administer the anæsthetic and two to hold the knees.

The woman should be placed in the lithotomy position, with her back resting in the Kelly Pad and her buttocks extending slightly beyond the edge of the mattress or table, as for a forceps operation. The legs, however, are *not* to be secured with the leg holder, but are to be held firmly by two assistants seated on the edge of the bed or table, one on each side of the patient.

The woman should not be placed in position for operating until she is fully anæsthetized. All the hair covering the mons veneris, vulva, and perineum is to be carefully shaved off, and the parts mentioned, as well as the abdomen and thighs, are to be thoroughly scrubbed with nail-brush, Tr. green soap, and hot water. She is then to be covered with fresh wet bichloride towels, leaving only the

field of operation and the vulva exposed, after which the disinfection of the uncovered parts is concluded by washing them thoroughly with, first, alcohol or ether; second, bichloride solution, 1–2000; and, third, hot sterile water. Disinfection of the vagina has not been mentioned, for, if that canal is to be regarded as normally free from bacteria and not to be sterilized preparatory to an uncomplicated labor, it is no less aseptic at the beginning of symphyseotomy. If, however, the operator has reason to fear that the vagina may have been infected at his own or another's hands, it should be scrubbed thoroughly with the fingers, soap, and hot water, and washed out with a hot lysol solution (two per cent.) before the disinfection of the external parts is begun.

The instruments required for symphyseotomy are:

Scalpel.
Hirst's Knife, for cutting subpubic ligament.
Galbiati's Knife (or Harris's modification).
Scissors.
Six Artery Forceps.
Thumb Forceps.
Metallic Catheter.
Needle Holder.

Curved and straight Needles.
Silk and Catgut Sutures.
Catgut Ligatures.

The instruments should be boiled in Copper Tray No. 1 with the cord instruments and douche-tube, while Copper Tray No. 2 contains the obstetrical forceps and instruments for immediate repair of the perineum, boiled and ready for use in case it becomes necessary to conclude the operation by forceps delivery.

Immediately before the operation is begun the bladder must be emptied.

The dressings required are:

Iodoform Gauze, two yards.
Plain Gauze.
Absorbent Cotton.
Four Strips Rubber Adhesive Plaster, each 2 x 20 inches.
Muslin Binder.
Safety-Pins.

All the assistants, including the anæsthetist, should wear operating *gowns*, not aprons; and the two assistants who are to support the legs must bestow as much care on the disinfection of their hands as does the operator himself.

XIII

THE DOUCHE

ASEPSIS, rather than *antisepsis*, in the conduct of labor being the aim of the modern obstetrician, the use of the *douche*, except in rare instances, has been entirely abandoned, and the subject may be discussed with propriety in a separate chapter.

The careful physician will, as far as it lies in his power to do so, keep his own cases aseptic from the beginning of labor until the end of the puerperium; but occasionally, as in consultation practice, or owing to the negligence of an incompetent nurse, the parturient canal will require prompt and thorough disinfection.

The custom of intrusting vaginal douching to the nurse is most reprehensible, for, if the injection is given with sufficient force and in sufficient quantity to really cleanse the vagina, more or less of the liquid will, in all certainty, enter the uterus through the gaping os. Hence, as every "vaginal" douche administered within a week after labor becomes, of

necessity, more or less *intra-uterine*, it should be given invariably by the physician and never by the nurse.

The solution to be used must be made with sterile water, and should be as hot as the patient can bear without discomfort. Lukewarm solutions tend to relax the uterus, and are apt to do more harm than good.

The douche-bag is to be boiled for ten minutes, or else flushed out with a quart or two of bichloride solution, 1–1000, after which a pint of plain sterile water should be allowed to run through it. The physician should supply his own douche-bag or have a new one purchased for the occasion. Old douche-bags belonging to the patient should never be made use of.

The douche-tube is to be boiled for ten minutes, removed from the fire, and, if necessary, cooled by the addition of plain sterile water; the greatest care being taken that nothing comes in contact with it or with the inside of the vessel in which it lies. The douche-pan is to be warmed, covered with a sterile or bichloride towel, and placed in position under the patient's buttocks, after which the vulva pad is to be removed and the vulva and adjacent parts thoroughly cleansed with sterile lysol solution (two per cent.).

PLATE XVIII.

METHOD OF ATTACHING RUBBER TUBING TO DOUCHE-TUBE.

While these preparations are being made by the nurse the physician will remove his coat, roll up his sleeves, put on a clean muslin apron or gown, and disinfect his hands as for a vaginal examination.

The greatest possible care must be given to this sterilization of the hands; the permanganate method being used if circumstances call for it.

When everything is ready, the physician will, *himself*, remove the douche-tube from the vessel in which it was boiled and hold it in such a way that the nurse can attach to it the rubber piping from the douche-bag without permitting the tube to touch *her* hands or the piping to touch the physician's hands. (Plate XVIII.)

When this has been accomplished, the physician separates the labia with the thumb and fingers of his left hand, as for a vaginal examination, and inserts the tube through the centre of the opening in the hymen without allowing it to come in contact with the adjacent parts, the nurse turning on the current at the same time so as to prevent the entrance of air into the vagina. (Fig. 12.)

If an intra-uterine douche is to be given, the vagina should be well flushed out before the tube is passed on into the uterus. One

or two fingers must be inserted into the vagina in order to locate the external os, and direct the tube; and it is well to take advantage of this opportunity to thoroughly but gently scrub the fornices and vaginal walls

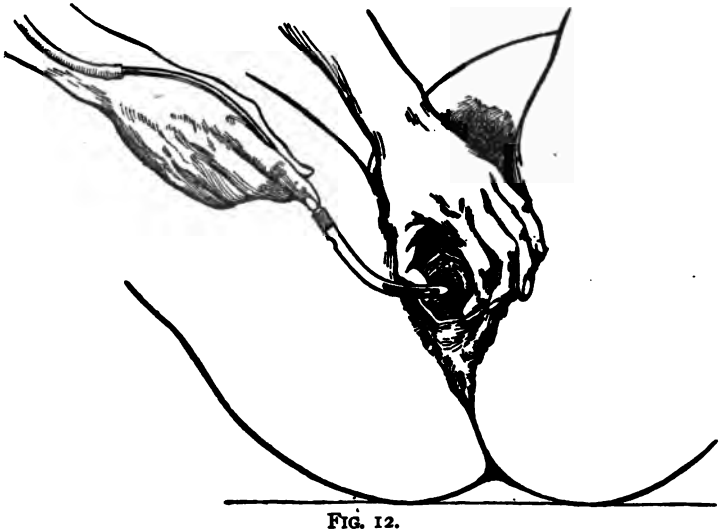


FIG. 12.

Proper method of introducing douche-tube.

with the finger-tips, only enough force being used to remove any mucus, pus, or blood-clots that may adhere to the tissues.

The writer invariably follows this plan, even when douching the vagina only.

After the douche has been given, a *clean*

vulva pad is to be applied, the douche-pan removed, and the patient made dry and comfortable.

Before the pan is emptied, its contents should be carefully examined for shreds of membrane, pieces of placenta, and the like.

XIV

CÆSAREAN SECTION

CÆSAREAN section should always be regarded as an elective operation, and one not to be performed, except in rare instances, after protracted attempts at delivery by forceps or version have been made. In such cases the child will be either dead or dying, and, in the interest of the mother, craniotomy should be done. The indications for the operation may be divided into two classes,—relative and absolute.

Primarily, it is to be borne in mind that the life of the mother is always the first consideration, and in a work designed for the guidance of the general practitioner, the advice given should be qualified by the statement that, under certain unavoidable circumstances, Cæsarean section may be distinctly contra-indicated, even in the face of marked pelvic deformity. This would hold in the case of a woman in charge of a physician unskilled in abdominal surgery and unable to obtain skilled

assistance, or so situated that a major operation could not be performed aseptically.

Assuming that all conditions are favorable for operation, the absolute indication would be a pelvis, otherwise normal, with a true conjugate diameter of seven centimetres or less. Not long ago a true conjugate diameter of 6.5 centimetres was regarded as the limit, but under improved methods the operation has been made so free from danger that one of seven centimetres is now accepted in its stead.

The relative indications include a flat pelvis with a true conjugate of 8.5 centimetres; a generally contracted pelvis with a true conjugate of nine centimetres; an overgrowth of the fetus; carcinoma of the cervix, or any condition of the maternal soft parts making delivery by the natural passages impossible.

In addition, the operation is indicated whenever the mother is approaching, but has not reached, a point where further efforts at natural delivery will greatly endanger her life, or where she is either dead or dying, and it offers the only means of saving the life of the infant.

The operator requires four assistants and two nurses, but under stress of circumstances three assistants and one nurse will be found

to answer. The assistants should be arranged as follows: One to administer the anæsthetic, one to directly assist the operator, one to take charge of the child, and one to hand instruments and make himself generally useful. One nurse should attend to the solutions, dressings, etc., and the other should be ready for any duties that may be assigned to her at any time. When but three assistants are available, the operator will take his instruments from a table placed within convenient distance of his right hand.

All the assistants and the nurses should wear operating-gowns, and, with the exception of the anæsthetist, they should all bestow as much care on the disinfection of their hands and forearms as does the operator himself.

Except in rare instances, ether is the better anæsthetic.

The instruments required are:

Scalpel.
Scissors, curved, straight, and angular.
Artery clamps.
Mouse-toothed forceps.
Sponge-holders.
Needle-holder.
Needles, curved and straight.
Sterilized catgut, Nos. 2 and 3.

The dressings are:

Iodoform gauze, five per cent.

Plain gauze.

Cotton.

Three adhesive-plaster strips, three by twenty inches.

One "many-tailed bandage."

Sterile vulva pads.

In addition, there should be several large sterile gauze pads, plenty of gauze or cotton sponges, and an ample supply of hot (110° F.) sterile salt solution (six-tenths per cent.).

The rectum and bladder must be empty.

Ordinarily, it is better to wait until labor has begun before operating; but when for any reason it is found best to operate before the commencement of labor, the cervix is to be dilated, either manually or with bags, until it will admit at least three fingers, and so insure free drainage from the uterine cavity. This step is of the greatest importance.

All the hair on the abdomen, mons veneris, and vulva is to be shaved off, and the entire abdomen disinfected by scrubbing, first with green soap, and then washing with alcohol, ether, and finally with sterile water, after which the field of operation is surrounded with sterile towels.

When the patient is thoroughly anæsthetized, and not before, an incision is made through the abdomen in the median line, beginning at a point about two inches above the umbilicus and extending to a point about four inches above the symphysis pubis. This incision should extend through the abdominal wall to the uterus, and may pass through the umbilicus or to one side of it. The slight hemorrhage can usually be controlled by the application of one or two hemostats. No concern need be felt with regard to the intestines, which will be found to lie entirely out of the way, above and behind the uterus; and if the bladder has been emptied with the catheter immediately before the operation, it will lie below the lower end of the wound.

The anterior uterine wall will now present through the abdominal wound, and it should be incised from above downward, beginning at a point as high up on the fundus as possible. This incision is to be extended downward in the median line, either with the scalpel, cutting from without inward, or with a curved blunt bistoury, on the finger as a guide, cutting from within outward, or with an angular scissors guided by the finger. It should be extended for about six inches, or

until there is sufficient room for the delivery of the head, and should be made as rapidly as possible, for, until the child and placenta are delivered, the hemorrhage from the uterine sinuses will be terrific. If by chance the placenta lies directly under the uterine wound, it should be cut through with the knife or scissors. Otherwise the hand is to be passed at once through the membrane, the child grasped by the head, arm, leg, or breech, and delivered with as little delay as may be. The cord is immediately clamped and cut, and the infant handed to an assistant who stands ready to receive it.

At the same time the operator's assistant compresses the fundus sufficiently to stimulate uterine contraction and prevent serious hemorrhage.

As soon as the child is delivered, the operator passes his hand again into the uterus, strips off the placenta and membranes, and removes all clots that may have formed within the cavity. The uterus is then washed out with the hot-salt solution, and a strip of sterilized or iodoform gauze (five per cent.) is passed with a dressing forceps from above downward through the cervix.

The edges of the uterine wound may now

be compressed with the fingers to control any further hemorrhage and held in this way until the suturing is begun.

The assistant who is holding the fundus maintains a firm grasp and kneads it occasionally with sufficient force to keep up vigorous contractions. At the same time hot-salt solution is poured over the uterus and into the abdominal cavity until all blood clots and other extraneous substances are washed away. As the diminished size of the contracted uterus may allow loops of intestine to appear at the upper part of the abdominal incision, gauze pads, wrung out of hot-salt solution, should be so placed as to cover and protect the gut. It is needless to say that these pads must be carefully counted as they are put in, to avoid the possibility of leaving any behind after the external wound is closed.

Six rows of sutures are needed,—three in the uterus and three in the abdominal wall. All are of catgut and all are continuous, with occasional interruptions to prevent too marked loosening as the uterus contracts.

The first line of sutures begins at the upper angle of the uterine wound, and the needle is passed through the muscular tissue down to, but not through the mucosa; then across into

the muscular tissue of the opposite side just above the mucosa, emerging just beneath the peritoneal coat, and so on in a running suture, with the stitches about one-quarter of an inch apart, until the lower angle of the wound is reached. It should be interrupted at two or three points to allow for contraction.

The second line, also of No. 3 catgut, is inserted in the same way, with the same interruptions, but includes the peritoneal as well as the muscular layer.

The third line is a running Lembert suture of No. 2 catgut, taking in the uterine peritoneum only and inverting its edges.

When the uterine wound is closed and every suspicion of oozing has ceased, the gauze pads are to be removed and carefully counted and the abdominal cavity again washed out with hot-salt solution. All clots and foreign material must be gotten out, but any of the saline solution that may remain will be absorbed. As an extra protection to the uterine wound, the omentum should, if possible, be drawn down over it before closing the abdominal incision.

The abdominal peritoneum is now picked up with four artery clamps, one at each end and one at each side of the incision, and closed

with a running, button-holed suture of No. 2 catgut. The fascia is brought together in the same way with No. 3 catgut, and then a continuous, subcuticular suture, also of No. 3 catgut, brings the skin edges together.

It is a good plan to cut out the umbilicus before closing the external wound.

The line of incision is now dusted with iodoform, covered with iodoform gauze, plain gauze, and cotton, and the entire dressing held firmly in place with the adhesive-plaster strips over which the many-tailed bandage is applied.

The gauze in the uterine cavity is removed through the cervix at the end of twenty-four hours, and the external dressing may remain undisturbed for a week if the patient's condition is good.

XV

ABORTION, PREMATURE LABOR, AND CURETTAGE

THE induction of Abortion, the induction of Premature Labor, and Curettage after the occurrence of miscarriage are operations not infrequently required of the general practitioner in the course of his obstetrical work, and yet, as a rule, inadequately described in the text-books of midwifery.

The writer employs one of two methods for emptying the uterus, his choice depending upon the duration of the pregnancy to be terminated. The method commonly described as the induction of *Abortion* is used when pregnancy is to be ended at any time during the first *four* calendar months. After that period the Krause method of inducing *Premature Labor* is followed.

It is hardly necessary to say that neither of these operations should be performed without the sanction and approval of *at least* one other regular physician in good professional standing, and unless all of its indications

are clearly present. When, however, the necessity for emptying the uterus has, after proper consultation, been definitely decided upon, the sooner it is done the better.

Assuming that the pregnancy is to be terminated at any time before the end of the fourth month of gestation, the following preparations are to be made:

General anæsthesia is always necessary, and, if the services of a competent nurse can be obtained, there need be but one medical assistant, who will administer the anæsthetic. When a good nurse is not available, the operator will require a second assistant to hold the speculum and assist him in other ways.

The instruments needed are,—

One uterine dilator of the "glove-stretcher" pattern.

One volsellum, with catch.

One Sims's speculum, medium size.

One graduated uterine sound.

One Emmet's "curette forceps."

Three long dressing forceps or "sponge holders."

Scissors, curved or flat.

The dressings are,—

One yard iodoform gauze, five per cent. sterile.

Twelve vulva pads, sterile.
One T-*bandage.*
One-half pound sterile absorbent cotton.

The woman is to be etherized and prepared for operation in precisely the same manner as for a forceps delivery. (See Chapter X.) She may lie on the bed, but it is far more satisfactory and convenient to have her placed on a firm table as soon as she is anæsthetized. As she will be removed to her bed when the operation is concluded, she need not know that the table is to be used. Many women, who will submit to any surgical procedure so long as they are not removed from their beds, are stricken with terror at the mere suggestion of performing the same operation on a table.

After the leg holder, rubber leggings, and towels have been adjusted in the manner already described, the operator will disinfect his hands as for Normal Labor, and seat himself in a chair directly facing the vulva. The instruments are to be boiled for ten minutes in the sodium carbonate solution, and the tray containing them is placed on a table covered with sterile or freshly laundered towels at the right hand of the operator. Besides the instruments, there should be on the table a basin of cotton sponges in 1–2000 bichloride

solution, a basin of the same solution for the physician's hands, and the dressings.

The vulva and surrounding parts are to be scrubbed thoroughly with Tr. green soap and hot sterile water, after which the soap is to be washed away with bichloride solution. The vagina is next to be scrubbed with the finger-tips, soap, and sterile water, particular care being taken that the fornices and all other places where infection might lodge are thoroughly cleansed. When this has been done the canal is to be flushed out with the douche-tube and two quarts of warm bichloride solution, 1–2000, after which it is to be mopped out with bichloride sponges held in the long dressing forceps. Each sponge must be squeezed dry *before* it is inserted, so that it will absorb and remove any solution that may remain in the vagina.

While the vagina is being mopped dry the assistant must thoroughly disinfect his hands, and take his place in a chair at the left of the operator. One blade of the Sims's speculum is anointed with sterilized vaseline or lubri-chondrin from a tube, inserted in the vagina as far as it will go, and drawn firmly downward and backward until the cervix uteri is in plain sight. When this step is reached,

the absolute necessity for having the woman's buttocks extend well beyond the edge of the table or mattress will be promptly appreciated.

The speculum is to be held securely in place by the right hand of the assistant passed under the patient's right buttock. The anterior lip of the cervix is now to be caught with the volsellum, drawn gently down towards the vulva, and the handle of the instrument given to the assistant, who will hold it in position with his left hand, his wrist resting on the mons veneris.

The dilator is next to be inserted gently into the cervix and the canal carefully and cautiously dilated until it will admit the closed blades of the curette forceps. Neither dilatation of the cervix nor curettement of the uterus must ever be attempted unless the anterior lip is fixed in the manner described, and the organ supported firmly and steadily in this way during the entire procedure. Dilatation must be attended with the utmost care and gentleness, and it may be fifteen minutes or more before the curettement forceps can be inserted. The dilator must be turned frequently on its long axis, so that the various diameters of the cervical canal will be successively stretched.

As soon as there is room for the curette forceps to pass, it should be inserted and its blades opened and closed several times in different directions in order to break up the ovum, after which it is to be removed, bringing with it any part of the fetus or its membranes that may have been caught between the blades.

It is not well to do anything further at this time, for the cervix is rigid and but slightly dilated, and the hemorrhage is often considerable. After the vagina has been thoroughly cleansed with bichloride sponges, a small strip of iodoform gauze should be carried into the uterus with the dressing forceps, the cervix released from the grasp of the volsellum, the vagina snugly packed with iodoform gauze, and the speculum removed, a finger being pressed firmly against the packing to prevent its being dragged out with the blade of the instrument. A sterile vulva pad is to be placed over the genitals, the T-bandage adjusted, and the patient put in bed.

The packing is to be removed at the end of twenty-four hours, when the cervix will be found soft and boggy, and in many cases the entire ovum will have been expelled from the uterus and lie in the vagina.

If, after careful examination, the ovum is found to be intact, a vaginal douche of 1–2000 bichloride solution is to be given (Chap. XIII.), and a small piece of iodoform gauze laid in the vagina to absorb the blood from the uterus. This should be removed at the end of the second twenty-four hours, and the vagina again flushed out with the bichloride solution.

If the uterus has been entirely emptied, and if the operator's asepsis has been faultless, there will be no further need of packing or douching, and the woman may be up and about her room in seven days.

A careful record should be kept of her temperature and pulse, and if the "flow" is considerable, the following prescription will be found useful:

Ext. hydrastis fluid.,
Ext. ergotæ fluid., āā ℥j,
M. et Sig.
One-half drachm every four hours.

CURETTAGE must be performed if, on removing the packing at the end of the first twenty-four hours, it is found that the uterus has not been completely emptied of the fetus *and its envelopes* by the efforts already made. The operation is also necessary when, after an

ordinary miscarriage, examination shows that only part of the uterine contents has come away. In any doubtful case, it is far safer to curette the uterus as a matter of routine.

The number of assistants and the preparations for operation are precisely the same as for the induction of abortion, with the addition of a medium-sized Thomas dull wire curette to the list of instruments.

Examination made twenty-four hours after the induction of abortion, or at any time after the occurrence of a spontaneous miscarriage, will reveal a soft and boggy cervix and a dilated or easily dilatable os.

The finger should first be introduced into the uterus (preceded, if necessary, by gentle dilatation of the cervix) and an effort made to hook out the contents. If this fails, the speculum is to be inserted in the vagina, the cervix drawn down with the volsellum in the manner described, and the embryo removed intact or piecemeal with the curettement forceps. When this has been accomplished, the cavity of the uterus is to be thoroughly and systematically curetted in the following manner:

The anterior wall is first gone over, then one lateral wall, the posterior surface, the other lateral wall, the fundus, and the cornua.

The utmost care must be taken that no undue force is exerted, for the walls of the uterus are not as firm and resistant as in the non-pregnant state.

When all fragments of fetus, membranes, and placenta have been removed, and the endometrium feels smooth and free from adherent particles, the uterus is to be flushed out with hot sterilized salt solution (one drachm to the pint), until the returning liquid is clear and free from débris.

A double current or "return flow" douche-tube should always be used for intra-uterine cleansing, lest the cervix contract firmly around the instrument, and some of the solution be forced into the Fallopian tubes.

Fritsch's Uterine Irrigation Tube as modified by Kelly has been most satisfactory in the hands of the writer.

If the hemorrhage continues after a reasonable amount of douching, it would indicate that the uterus is not entirely empty, or that some placental tissue is still attached to its wall, and an effort should be made with the finger, forceps, or curette to locate and remove the mass.

The vagina is now to be wiped dry with cotton sponges, and, if there is any bleeding

beyond a slight oozing from the external os, the cavity of the uterus should be touched with Tr. iodine.

One of the applicators is wrapped snugly with dry, sterile cotton, dipped in the iodine and passed through the cervix up to the fundus. The uterus will contract firmly upon the instrument, and if too much cotton has been used, or if it has not been wound on tightly, there is danger that it may be pulled off and left in the cavity of the womb when the applicator is withdrawn.

This accident may be prevented by proper wrapping of the instrument, and by waiting a few moments for the uterine spasm to subside before withdrawing it.

The iodine application may have to be repeated three or four times, after which the vagina is to be again wiped dry, a strip of iodoform gauze is passed into the cervix, and the vaginal canal packed with the same material.

The subsequent management of the case is precisely the same as after the induction of abortion.

The INDUCTION OF PREMATURE LABOR according to the Krause method is the procedure adopted whenever the uterus is to be emptied after the end of the fourth month of gestation,

providing haste is not the essential factor among the indications.

Anæsthesia is not necessary, and no assistant other than the nurse is required.

The operator's hands and the woman's vulva and vagina are to be thoroughly disinfected in the manner already described; and the patient is to be brought to the edge of the bed with her thighs and knees flexed and well separated. The first and middle fingers of the right hand are inserted into the cervix as a guide, and a new silk or linen bougie (No. 12, French), that has been soaking over night in *cold* bichloride solution, 1–1000, is anointed with sterile vaseline and passed along them into the uterus.

As soon as its tip has entered the cervix, one finger may be removed, and the other carried up as far as possible to protect the membranes and guide the instrument between them and the uterine walls. The bougie is now to be pushed on as far as it will go, or until only two or three inches are left in the vagina.

No fear of puncturing the uterine wall need be felt, as the instrument will curl up on itself when any obstruction is encountered, but every precaution must be taken against premature rupture of the membranes. This will not

happen if the bougie is once fairly started between them and the wall of the uterus.

The vagina is now to be packed with iodoform gauze, and the woman may be up and on her feet. Labor pains will, as a rule, begin between thirty minutes and twenty-four hours after the insertion of the bougie.

If there have been no developments by the end of twenty-four hours, the bougie may be removed and introduced in a different position, or a second one may be inserted by the side of the first.

After true labor pains begin the bougie will be forced out of the uterus, and the case will not differ from a normal delivery, unless the indications for the induction of labor also necessitate its termination by forceps or version.

If, however, no uterine contractions have occurred in thirty-six hours after the first bougie was inserted, the patient should be anæsthetized and prepared as for a forceps operation, the cervix dilated, either manually or with Barnes's bags, and the delivery completed by forceps or version.

The Barnes's bags should be boiled for ten minutes before use, and sterilized water must be used for distending them so that in case one bursts no harm will be done. A David-

son syringe must be used and the water must be warm. It is a good plan to test each bag before use by pumping it up with the syringe and keeping count of the number of strokes necessary to fill it.

The easiest method of inserting the bags after the os is slightly dilated is to hook the tip of the forefinger in the little pocket near the top of the bag, and so carry it into the cervix. It should then be held in place while an assistant or the nurse pumps it sufficiently full to be self-retaining.

The finger should then be withdrawn and placed on the edge of the cervix, so that the degree and rapidity of dilatation can be noted and regulated.

In all cases of this kind the danger of hemorrhage and of adherent placenta must be kept constantly in mind, and the asepsis of the operator and his assistants must be absolutely perfect.

When immediate emptying of the uterus is demanded, as in a threatened eclamptic attack, the Krause method is too slow; and the patient should be anæsthetized at once to the surgical degree, and the labor accomplished by means of Barnes's bags, manual dilatation of the cervix, and forceps or version.

XVI

THE OBSTETRICIAN

THE Obstetrician must, in justice to his patients, be free from the pursuit of any avocations requiring his prolonged absence from his office, and he should have a standing arrangement with a suitably qualified professional neighbor to attend promptly to his work when he is unavoidably prevented from doing so himself.

He must be particularly careful in the matter of personal cleanliness, giving special attention to the care of his hands, finger-nails, beard, and hair. Clothing that has been worn to a contagious or infectious case must never find its way into the lying-in chamber, and if gloves are worn at all they should be of some washable material.

PROPER COSTUME FOR OBSTETRICAL NURSE, SHOWING DETACHABLE SLEEVES.

XVII

THE OBSTETRICAL NURSE

THE Obstetrical Nurse fills a very trying position, and, to be successful, must be especially adapted to her chosen calling.

She has two patients under her care, and many demands are made upon her time, strength, and good-nature, both by day and night. Consequently, she must be cheerful and obliging as well as neat, trustworthy, and entirely truthful. Above all else, she must be thoroughly in accord with the physician, obeying his orders to the last degree, and reporting to him at once any infractions of the rules that he has laid down for the patient. Bright, intelligent women between the ages of twenty-eight and thirty-five years make the best obstetrical nurses. Old women and so-called "monthly nurses" are worse than useless.

The nurse, like the physician, must be scrupulously neat and cleanly in her habits and instincts. When in attendance on a case

she should wear a dress of wash goods, made with detachable sleeves which can be taken off when she has any duties to perform about the patient. (Plate XIX.) An apron must always be worn, and a nurse's cap is very desirable.

A nurse should be careful to supply herself with enough clean dresses, aprons, and caps to provide against any emergency. A bed or cot should be prepared for her in the lying-in room, but she should under no circumstances sleep with the patient.

If possible, her work should be so arranged that she can be out of doors in the fresh air for an hour every day, and the thoughtful physician will see that this opportunity is given her.

APPENDIX A

THE writer records the histories of his obstetrical cases on printed cards of the kind adaptable to the Globe-Wernicke Card Index System. Three cards are required for each patient,—one for the Pregnancy, one for the Labor, and one for the Puerperium. A leather pocket-case is used, in which the cards are carried as long as the patients are under daily observation, after which they are placed on file in the proper drawer of the cabinet.

Four or five sets can be carried at a time, together with one or two blank sets for new patients.

In this way the record of every case is available for instant reference or additions as long as the patient is under active treatment, and readily accessible at any future time.

The cards are reproduced in their actual size and will explain themselves.

No.....

PREGNANCY.

Labor Expected.....19.....

Mrs.....No.....ge.....Nat.....Married.....

FAM. HIST......

PERS. HIST: Rickets?..... Scarlet?..... Diphth?..... Neph?..... Syphilis?.....

.....

.....

PHYS. EX: Heart..... Lungs..... Liver..... Spleen.....

MENS: Began at.....yr. Int.....days Dur.....days Am't..... Pain..... {BEFORE / DURING / AFTER}

PREV. PREG:..... Term..... Interrupted.....mo. Cause.....

Vom..... Headache..... Edema.....

PREV. LABORS:.....Char....., Child {LIVING / DEAD}..... Wgt..... Comps.....

Treat.....

PREV. CHILD BEDS, Fever?..... Nursing?..... Breasts?..... Comps.....

LAST MENS: 1st Day.....19..... Duration.....days Am't..... Quickening.....19.....

PRES. PREG: Vom..... Headache..... Edema..... Tension.....

Albumenuria..... When.....mos. Treat.....

.....

.....

.....

FRONT OF PREGNANCY CARD.

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EXAM......19.....; **BREASTS:**..... Nipples..... Sec.....

ABDOMEN: Form..... Navel..... Fundus.....cm. above symph. pub.

PELVIS: Ant. Spine.....cm. Crests.....cm. Trochant.....cm. Oblique {R..... / L.....} cm.

Ext. Conj.....cm. Post. Spine.....cm. True Conj.....cm. Diagnosis.....

FETUS: Heart {RIGHT, UPPER / LEFT, LOWER} Quadrant. Rate..... {LOUD / FAINT} Movements.....

Presentation..... {ABOVE / IN / BELOW} Brim. Position.....

VAGINA: Size..... Secretion.....

CERVIX: {TORN / INTACT / REPAIRED} {LONG / SHORT} Ext. os..... Int. os..... Sec.....

PERINEUM: {TORN / INTACT / REPAIRED} {LONG / SHORT} Dilatable ?.....

REMARKS:.....

No....., Date.....19..... **LABOR.** Date of Birth,.....19.....

Mrs....., No..... M....., Nurse.

First Stage Began.....A. M. / P. M. .....19..... T..... P..... R..... A. P. Treat.....

Second Stage Began.....A. M. / P. M. .....19..... Mem. Rupt. {ARTIF. / SPON} .....A. M. / P. M.....19.....

Birth at .....A. M. / P. M. .....19..... Plac. {CREDE / SPON} .....A. M. / P. M. Total Dur. Labor.....H.....M

First Stage: Pres.....Pos.....Pains.....HEAD / BREECH} {ABOVE / IN / BELOW} Brim.; F. Heart.....

Mat. con.....Cervix {DILATABLE / RIGID} Treat. 1st. Stage.....

Second Stage: Pres.....Pos.....Pains.....HEAD / BREECH} {ABOVE / IN / BELOW} Brim.; F. Heart.....

Mechanism.....Attitude.....Mat. con.....Posture.....

Chlor. Obst. Deg. Continuously
Ether. Surg. Deg. Discontin. By.....From.....A. M. / P. M. to.....A. M. / P. M. Total.....Min.

Placenta: Pres.....Complete?.....Weight.....oz. Condit.....Anomalies.....

Membranes: Complete?.....Rupture.....Hemorrhage {SLIGHT / MODERATE / CONSID.} Total {ESTIMATED / WEIGHED} .....oz.

Cord: Length.....in. Insertion.....Around {NECK / BODY} .....Times {TIGHT / LOOSE} Treat.....

Perineum: {INTACT / TORN} Why?..... Sutures, {KIND..... / NUMBER .....} Cervix: {INTACT / TORN} Why?..... Sutures, {KIND..... / NUMBER .....}

Child: {MALE / FEMALE} Weight.....7 6 lbs. Condit..... Prim. Resp. {SPON / ARTIF.} In.....Min. Cry.....

Douche: {VAGINAL / UTERINE} Why?..... Maternal Condition, 1 hr. Post Part.....

Charac..... Amt.....oz. Temp.....°F T..... P..... R..... Fundus.....

Asepsis Satisfactory?..... Uterus during interval.....

FRONT OF LABOR CARD.

OPERATION.

FORCEPS: Kind....., { HIGH / MED. / LOW } Indication.....

Left Blade..... A. M. / P. M. Right Blade..... A. M. / P. M. Locked..... A. M. / P. M. Removed..... A. M. / P. M. { EASY / DIFFICULT }

Position..... Traction..... Compression..... Delivery { SPONTANEOUS / INSTRUMENTAL }

VERSION: Kind..... Indication.....

Begun..... A. M. / P. M. Ended..... A. M. / P. M. { EASY / DIFFICULT } Delivery.....

BREECH CASE: Breech..... A. M. / P. M. Navel..... A. M. / P. M. Shoulders..... A. M. / P. M. Mouth..... A. M. / P. M.

REMARKS.....

.....

.....

.....

.....

.....

.....

.....

BACK OF LABOR CARD.

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No.....

Mrs.....

PUERPERIUM.

.....19.....

MOTHER						CHILD				
DAY	DATE	BREASTS	FUNDUS	LOCHIA	BLADDER	EYES	CORD	BOWELS	URINE	WEIGHT
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										

EXAM. .....days P.P.; Breasts....., Cervix .....

Uterus.....involuted. Perineum.....

Adnexa.....Gen'l Condition.....

Eyes..... Navel..... Buttocks.....

Nursing..... Genitals.....

Gen'l Condition .....

FRONT OF PUERPERIUM CARD.

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TEMPERATURE (FAHRENHEIT)

DATE																												
DAY																												
HOUR	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
105°																												
104°																												
103°																												
102°																												
101°																												
100°																												
99°																												
98°																												
97°																												
PULSE																												
RESPIR.																												
URINE																												
STOOLS																												

APPENDIX B

A LITTLE pamphlet, of which the following is a reprint, is given by the writer to each of his obstetrical patients on the occasion of her first visit.

NOTE.—This Pamphlet has been prepared for private distribution among the author's obstetrical patients. It is needless to say that the suggestions and advice given should be followed out to the letter. Nothing has been inserted that is not essential to the health of the mother and her infant, and to the successful outcome of the case.

JOSEPH BROWN COOKE, M.D.

GENERAL REMARKS

EVERY pregnant woman should place herself under the care of the physician who is to attend her in her confinement *as soon as she is aware of her condition.*

He will then be in a position to foresee, and in all probability to prevent, the occurrence of unfavorable complications.

During pregnancy, corsets and everything

else that tends to constrict the chest, waist, or abdomen should be discarded. *This rule is of the greatest importance to both the mother and the child.*

A good substitute for corsets is the "Ferris Waist," or some garment of similar construction which permits the weight of the skirts to be borne by the shoulders.

A broad ABDOMINAL BAND may be worn if, by its support, it gives comfort.

GARTERS that encircle the leg should be dispensed with, and in their place some form of stocking supporter should be used.

UNDERWEAR should be of *wool*, in weight suited to the season of the year, and should consist of vest with long sleeves, and long under-drawers—or of the so-called "combination" suit made in one garment.

OUTER GARMENTS should fit loosely and comfortably, and should be enlarged as often and as much as occasion requires.

The pregnant woman should remember that from the moment of her conception her whole duty is to herself and her child, and that attempts to conceal her condition by lacing and similar means are both foolish and morally wrong, for such efforts at concealment are effectual for a short time only, and are

apt to interfere seriously with the development of the infant as well as with the general health and comfort of the mother.

The better a woman's health and strength during her pregnancy, the better will she be able to pass through the ordeal of labor and perform the duties of motherhood.

Regular, daily EXERCISE in the open air should be taken as far as practicable. This should never be pursued to the point of fatigue, and will, of course, be governed largely by the state of the weather. Ordinary "rainy days" need not prevent the usual outing, provided the woman be warmly and dryly clad and shod, but during heavy storms of rain or snow it is best to remain indoors. There is no better form of exercise than walking, and it has the additional merit of economy and convenience.

As already mentioned, it is of the utmost importance that the body, and especially the feet, be kept warm and dry. *Neglect of this rule may result seriously to the mother.*

In the event of unavoidable exposure to cold and wet, the first opportunity should be taken to completely remove all clothing in a warm room and rub the entire body briskly with rough towels until a good circulation of

the blood is established and the skin is warm and glowing. Warm, dry clothing should then be put on, and a hot drink of lemonade, tea, or whiskey and sweetened water would not be out of place.

Particular attention should be given to the FEET, and if they do not regain warmth, hot-water bottles, hot flat-irons, or hot stove-lids should be made use of.

Too much emphasis cannot be laid on the necessity for avoiding exposure to cold and dampness.

The pregnant woman requires abundance of SLEEP, and a nap of one or two hours should be taken every afternoon.

The functional activity of the SKIN should be maintained by means of the warm general bath, accompanied by the free use of soap,—daily in warm weather, and at least twice a week in cold weather. *Baths are best taken at night, immediately before retiring, to avoid the danger of catching cold.*

The TEETH of the pregnant woman are apt to undergo certain destructive changes, giving rise to the old proverb, "For every child a tooth." This condition can be obviated to a great extent by giving special attention to the care of the mouth. The teeth should be

brushed at least twice a day with a soft brush, and the mouth thoroughly rinsed after each meal with a weak solution of Listerine (one teaspoonful to a third of a glassful of lukewarm water). Any soreness of the teeth, mouth, or gums which does not subside promptly under this treatment should be reported at once to the physician.

SEXUAL INTERCOURSE is to be regulated carefully. During the first four months of pregnancy, and again towards the end of the period, it is best for husband and wife to occupy separate beds.

A normal action of the BOWELS should be maintained, and the physician should be consulted if the ordinary household laxatives are not sufficient to cause one evacuation daily.

Seidlitz Powders, Hunyadi Water, or one of the Saratoga Waters may be taken in the morning, or a teaspoonful of Compound Licorice Powder or of Fluid Extract of Cascara Sagrada at night, with safety, but the stronger cathartics should be avoided.

Care must be taken, however, not to go to the opposite extreme and permit the existence of DIARRHŒA. In such event the physician should be notified if it persists more than

twenty-four hours, or sooner if it is of marked severity.

In the matter of DIET, the pregnant woman may, ordinarily, be allowed to consult her own taste so far as it is consistent with common sense. Food should be plain, nourishing, and of sufficient quantity. Unusual, highly seasoned or very rich dishes should be shunned. If, however, there is an actual craving for such things, the physician should be consulted before it is yielded to.

While the appetite is naturally somewhat increased at this time, it should be kept within bounds, and "over-eating" must be avoided.

A woman is often unduly, and abnormally, irritable and "nervous" during pregnancy,—a state of affairs due largely to her condition. It is, therefore, the duty of her husband, and of all others who come in contact with her, to make her home life and surroundings as enjoyable and free from care and anxiety as possible.

But it is none the less her own duty to overcome, as far as may be, any tendencies that she may have towards petulancy and peevishness. She and her family should unite in an effort to make this period of her life notable for its happiness.

From the first, late hours, dancing, horseback or bicycle riding, and similar forms of recreation, should be given up.

Regularity in living and moderation in recreation, exercise, and eating are among the essentials of good health.

Any deviation from ordinary good health should be reported at once to the physician. Among the symptoms that may appear and require professional scrutiny are: Excessive vomiting, tending to weaken the patient; loss of appetite; sleeplessness; severe or continued headache; disturbances of sight, such as dimness of vision or the appearance of spots floating before the eyes; fainting; swelling of the face, hands, or feet, and any diminution in the amount of urine passed.

The safest plan is to consult the physician if *anything* interferes with ordinary good health. The idea should *not* be entertained that because a woman is pregnant she is bound to suffer, or even be uncomfortable, the greater part of the time.

During the last two months of pregnancy the BREASTS and KIDNEYS require careful attention. The former should be bathed daily in cold water, and the nipples drawn out with the thumb and index-finger for a few minutes

each day. If the nipples are small, retracted, or depressed, or if there is any tendency towards soreness or tenderness, the physician should be notified. *Of far greater importance* is the condition of the bladder and kidneys, and during the last two months of pregnancy a specimen of urine should be sent to the physician's office once a week for examination. The specimen should be from the first urine passed after rising, and should be collected in a *clean* bottle, which is to be securely corked and marked with the patient's name and address and the date.

THE LYING-IN ROOM

The choice of the Lying-in Room is not a matter of indifference.

It should be commodious, well ventilated, and one that can be maintained at a uniform and comfortable temperature (70°–72° Fahrenheit). A sunny exposure and an open fireplace are desirable features.

Under no circumstances should a room be selected if it has recently been occupied by a patient suffering from a suppurating wound, cancer, erysipelas, child-bed fever, or any of the ordinary "contagious" diseases, such as diphtheria, measles, scarlatina, or typhoid;

nor should furniture, mattresses, or pillows that have been used by such a patient be admitted to the lying-in room.

About a week before labor is expected to occur the room should be thoroughly cleaned and aired, and all unnecessary curtains, portières, rugs, and ornaments removed. It is not necessary or desirable, however, to so far dismantle it as to render it unattractive and cheerless. The essential point is to make it scrupulously clean and keep it so.

PREPARATIONS FOR LABOR

THE ROOM.—This should be clean and warm, and contain, beside the ordinary furniture, a table covered with freshly laundered towels; two wash-basins and slop-jar; plenty of hot water, and at least a gallon of cold water, which has previously been boiled for half an hour and allowed to cool in a covered vessel or in large, corked bottles. As the majority of labors occur during the night, ample provision for lighting should be made, and a small gas- or oil-stove is a convenience, if not a necessity.

The BED should be strong and firm, with a flat hair mattress, and should be made ready as follows: The mattress is covered with a

rubber sheeting, over which is laid a white linen or cotton sheet. These two coverings are pinned fast to the mattress to prevent their slipping. Over them is placed a second rubber sheeting and a second white sheet, while another sheet, folded in several thicknesses, or the obstetrical pad (to be described later) is placed in a position to receive the discharges. At the conclusion of labor these last coverings may all be removed at once, leaving on the bed only the first rubber and the first white sheet. When practicable it is best to provide a small cot, prepared as above, on which the labor can take place, after which the patient will be removed to her bed. *The rubber sheeting must be absolutely clean, and all the bedclothes freshly laundered.*

THE PATIENT.—As soon as labor pains begin the physician should be summoned. While awaiting his arrival the patient should receive a thorough bath with soap and warm water, and then dress herself in a clean night-gown and clean stockings, over which she will wear a warm wrapper or bath-robe. If the pains are very severe from the first, a good sponge-bath will answer, but as a rule there is nothing to prevent her using the tub, assisted by the nurse or other attendant.

If the patient has been sleeping in the bed in which she is to be confined it should be dismantled at once, the mattress turned over, and prepared for the labor with fresh, clean bedding in the manner already described.

ARTICLES TO BE PROVIDED BY THE PATIENT

At least three weeks before labor is expected, the following articles should be provided and ready for use:

SIX ABDOMINAL BINDERS.—These are to be made of the cheapest grade of unbleached muslin, one and one-quarter yards long and one-half yard wide. They should simply be torn in the required size and not hemmed or finished in any other way.

TWO OBSTETRICAL PADS for receiving the discharges. Each is a bag of cheese-cloth, twenty inches square, and stuffed with cotton batting so as to make a pad three or four inches thick, and "tacked" or tufted in such a manner as to prevent the cotton from slipping or crowding out of place.

It should then be rolled or folded into as compact a shape as possible, pinned up in a towel or piece of clean white cloth of any sort, and laid away until needed.

ONE DOZEN CLEAN TOWELS, made up in a

parcel, and covered with cloth or with another towel.

TWO AND ONE-HALF DOZEN SANITARY PADS.—These are made of absorbent cotton, ten inches long by three inches wide and two inches thick, covered with white (bleached) cheese-cloth.

A one-pound package of plain absorbent cotton, to be had at any druggist's, will make the required number of pads. They should then be pinned up in towels or clean muslin in packages of six pads each and laid away until required.

SAFETY-PINS.—Two papers of large and one of small size.

ONE NEW NAIL-BRUSH.—The best are those with wooden backs, costing five or ten cents each.

ABSORBENT COTTON.—One-half pound, Johnson & Johnson's.

TINCTURE OF GREEN SOAP.—Four ounces.

LYSOL.—Four ounces. Both obtainable at the druggist's without a prescription.

ALCOHOL, ninety-five per cent. Six ounces.

ONE BOTTLE OLIVE OIL.—Barton & Guestiers' salad oil, 40-cent size.

ONE TUBE PLAIN VASELINE.

ONE CAKE SOAP.—Castile or Ivory.

Six Flannel Binders for the infant, six inches wide by one-half yard long.

One Soft Flannel Blanket, one yard square for wrapping up the infant immediately after birth. Any old soft piece of woollen goods will answer, provided it is clean.

Diapers, slips, and other clothing for baby.

Rubber sheeting, two wash-basins, preferably of agate or enamel ware, and a good supply of clean white sheets, pillow-cases, and towels.

Everything must be scrupulously clean, and the various articles should be put away in one place where they can be gotten at the moment they are needed. There should be no confusion or delay at the last minute.

APPENDIX C

A SHEET of instructions, of which the following is a reprint, is given by the writer to every nurse in attendance on his obstetrical cases.

DIRECTIONS FOR THE NURSE IN OBSTETRICAL CASE

The Water-closet must not, under any circumstances, be used by the patient after the commencement of labor.

Give rectal injection as soon as pains begin (one pint of soapsuds, teaspoonful of spirits of turpentine). Have the patient wash the external genitals thoroughly with soap and warm water, and dress herself in night-gown, stockings, slippers, and dressing-gown or wrapper.

Fill three pitchers with water that has been *boiling* for half an hour; tie clean towels over their tops. This water is to be used for all purposes about the patient and for making the antiseptic solutions.

Prepare the bed (or cot) for the labor with rubber sheeting and *clean bedding*.

See that there is a plentiful supply of hot water, and that the provisions for lighting are ample.

Give no vaginal douche unless specially directed to do so.

Take temperature and pulse every four hours for first week; afterwards, night and morning.

Report at once pulse over 100 or temperature over 100½° F.

Place pad of nursery cloth, a folded clean towel, or a folded clean sheet *under* patient; change it when soiled.

Occlusive dressing (sanitary pads) to be made of absorbent cotton and plain gauze or cheese-cloth with *clean hands*, and pinned to binder in front and behind. They should be sterilized before use, and are to be changed every four hours for first week.

External genitals to be bathed every four hours with warm lysol solution (two teaspoonfuls to the pint) made up with boiled water. Use absorbent cotton for this purpose.

If, at the end of twelve hours, the bladder cannot be emptied naturally, use the catheter.

Afterwards, if necessary, catheterize the patient three times a day.

Boil catheter for ten minutes before use. *Expose the meatus* and cleanse the surrounding parts thoroughly with the lysol solution before passing catheter.

The patient is to lie on her back; she may be moved from one side of the bed to the other several times a day. Her limbs may be rubbed with alcohol and water or bathing whiskey once a day.

The nurse's hands are to be scrubbed with a nail-brush, soap and water, and rinsed in a 1–2000 bichloride solution before catheterizing the patient or cleansing the genitals or breasts.

DIET.—*First forty-eight hours.*—Milk (one and one-half to two pints a day), gruel, soup, one cup of tea a day, toast and butter. *Second forty-eight hours.*—Milk-toast, poached eggs, porridge, soup, corn-starch, tapioca, wine-jelly, small raw or stewed oysters, one cup of coffee or tea a day. *Third forty-eight hours.*—Soup, white meat of fowl, mashed potatoes, beets, in addition to above. After sixth day, return cautiously to ordinary diet,—that is, three meals a day, meat of an easily digested character at one of them,—white meat of fowl, tenderloin of beef, etc. Also a glass

of milk three times a day, between meals and before going to sleep at night, and a glass in the middle of the night.

CHILD.—After being well rubbed with sweet oil, the child is to be washed *on the nurse's lap.* The bath-tub must not be used until the cord is healed. Water, 98° to 100° F. *Use a thermometer.* The cord is to be dressed with plain sterilized gauze. Observe carefully for bleeding. For a dusting powder use starch, five parts; salicylic acid, one part. The child should be bathed daily, about mid-day, in the warmest part of the room. Avoid draughts. Use castile soap and a soft sponge; avoid the eyes. Diapers to be changed as often as wet or soiled. For chafe, use sweet oil or cold cream and talcum powder.

NURSING.—The child is to be put to the breast every four hours for the first two days. *No other food is to be given it.* After the second day it should be nursed every two hours, from 7 A.M. to 9 P.M., and twice during the night—1 A.M. and 5 A.M.

BREASTS.—Before and after each nursing, the nipples are to be thoroughly cleansed with a saturated solution of boric acid, applied with fresh pledgets of absorbent cotton. If the breasts become tense and tender apply

a snug breast-binder. Watch carefully for any soreness or erosions of the nipples.

The idea of using printed instructions of this kind was borrowed by the writer from Hirst's "Text-Book of Obstetrics." Their use prevents the possibility of any forgetfulness or misunderstanding on the nurse's part, and is worthy of general adoption.

NOTE.—The History Card outfits, Pamphlets for distribution among patients, and Sheets of Directions for Nurses, as described in the preceding appendices, can be obtained from The Hawkes-Jackson Company, 82 Duane Street, New York City.

THE END